Master Controller

User Manual

for v2.2.1 Firmware

(Manual Revision 1.02)

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JTECH declares under our sole responsibility that the product Master Controller to which this declaration relates, is in conformity with the following standards and/or other normative documents.

- EN 55022: 1994 +A1: 1995 +A2: 1997
- EN 301 489 -2 v1.3.1 (2002-08)
- EN 301 489 -7 v1.3.1 (2005-11)
- EN 60950-1: 2001

We hereby declare that all essential radio test suites have been carried out and that the above named product is in compliance to all the essential requirements of Directive 1999/5/EC.
The conformity assessment procedure referred to in Article 10(5) and detailed in Annex IV of Directive 1999/5/EC has been followed with the involvement of the following notified body:

Bay Area Compliance Laboratory Corporation, 1274 Anvilwood Ave., Sunnyvale, CA 94089, USA
Identification mark: 1313 *(Notified Body Number)*

The technical documentation relevant to the above equipment can be made available for inspection on application to JTECH.

CE 1313

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SAA (AUSTRALIA)

To ensure compliance with ACA Technical Standards, this equipment is labeled with a Telecommunications Compliance Label. For safety reasons, this equipment should only be connected to compliant telecommunications equipment in accordance with the manufacturer's instructions.

FCC (USA)

Part 15

This equipment has been tested and found to comply with FCC Rules and Regulations, Part 15 with the limits of a Class B digital device, designed to provide reasonable protection against harmful interference. This equipment generates, uses and can radiate frequency energy and if not installed and used in accordance with the instructions, may cause interference harmful to radio communications. On the base of the equipment is a label containing an FCC Registration Number, if applicable.

Part 68

This equipment complies with Part 68 of the FCC rules. Located on the equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN.) If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive REN's on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total REN's contact the telephone company to determine the maximum REN for the calling area.

This equipment cannot be used on the telephone company-provided coin service. Connection to Party Line Service is subject to State Tariffs.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right the file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please contact:

JTECH Communications, Inc., 6413 Congress Avenue, Suite 150, Boca Raton, FL 33487, Ph: 561-997-0772

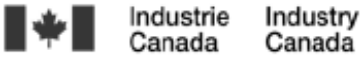
If the trouble is causing harm to the telephone network, the telephone company may request you to remove the equipment from the network until the problem is resolved.

This equipment uses the following USOC jacks: RJ11C

It is recommended that the customer install an AC surge arrester in the AC outlet to which this device is connected. This is to avoid damaging the equipment caused by local lightning strikes and other electrical surges.

IC (INDUSTRY CANADA, INDUSTRIE CANADA)

This class B digital apparatus complies with Canadian ICES-003.



SAFETY AND GENERAL INFORMATION

Important information on safe and efficient operation. Read this information before using the unit

Electromagnetic Interference/Compatibility

Nearly every electronic device is susceptible to electromagnetic interference (EMI) if inadequately shielded, designed, or otherwise configured for electromagnetic compatibility.

Potentially Explosive Atmospheres

Do not operate the Master Controller in any area with a potentially explosive atmosphere. Sparks in a potentially explosive atmosphere can cause an explosion or fire resulting in bodily injury or even death. Areas with potentially explosive atmospheres include fueling areas such as below decks on boats, fuel or chemical transfer or storage facilities, areas where the air contains chemicals or particles such as grain, dust, or metal powders, and any other area where you would normally be advised to turn off your vehicle engine. Areas with potentially explosive atmospheres are often but not always posted.

Blasting Caps and Areas

To avoid possible interference with blasting operations, do not use the Master Controller near electrical blasting caps, in a blasting area, or in areas posted: “Turn off two-way radio.” Obey all signs and instructions.

SELV/TNV-3 warning

The TITAN Telephone Router and Master Controller have been assessed as having TNV-3 and SELV circuits, all non PSTN ports shall be connected to approved SELV circuits or an approved isolation unit shall be used.

PSTN Line Cord warning

To comply with PSTN safety requirements the use of 26AWG line cords is recommended.

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About This Handbook

This manual is designed to assist with installation of the TITAN Master Controller. Every component of the system is described in a separate section of the manual with step-by-step instructions to facilitate hardware installation and software configuration.

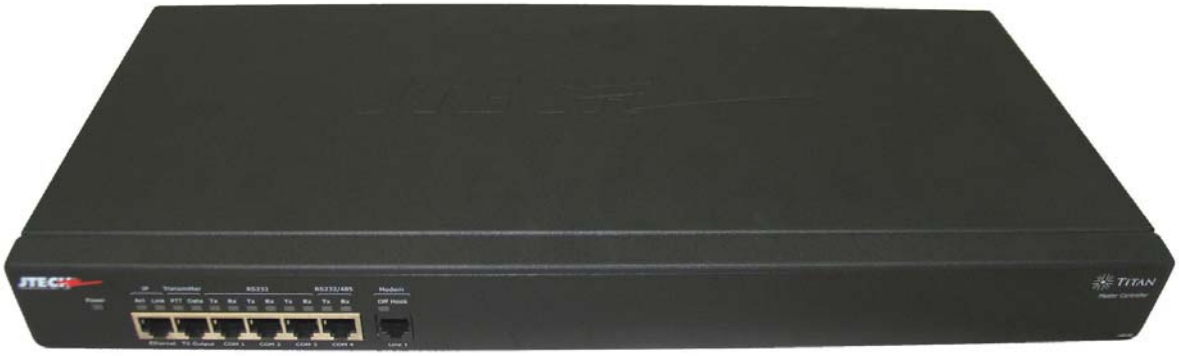
Conventions

NOTE: A note preceded with this symbol indicates secondary information pertaining to the topic under discussion.

IMPORTANT: A Right-pointing arrow followed by text in this manner presents important information.

WARNING: Warnings like this alert you to the fact that you might damage your equipment or lose data if you don't follow instructions carefully.

1 ABOUT THE MASTER CONTROLLER



1.1 Introduction

The TITAN Master Controller is a message routing module with built in paging encoder, alarm management and various forms of messaging protocol inputs and outputs. Messages can be routed to and from any port. A multi-user multi-lingual web browser interface provides generalized messaging and configuration.

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1.2 Master Controller Kit

Your Master Controller Kit will contain:

- Master Controller Unit
- IEC Mains power cable
- Pack including 2 x rack ears, 6 x black countersunk screws, 4 x rubber feet
- Communications cables
    - 1 x Green – Crossover serial cable (RJ45 to RJ45)
    - 1 x Black – Serial cable (RJ45 to DB9 female)
    - 1 x Blue – Straight through cable (RJ45 to RJ45)
    - 1 x Red – Crossover Ethernet cable (RJ45 to RJ45)
- This Master Controller Installation Manual
- A CD containing manuals and configuration programs

1.3 Front Panel

1.3.1 LED Indicators

- **Power Indicator**

  Power (Yellow) **-** Indicates that power is applied to the back of the unit and that it is operational.

- **Ethernet Indicators**

  IP Activity (Green) - Indicates activity on the network

  IP Link (Green) - Indicates device is successfully connected to the network.

- **Transmitter Indicators**

  PTT (Yellow) - Indicates that the externally connected POCSAG transmitter is currently busy transmitting ("Keyed up")

  Data (Red) - Indicates POCSAG data activity.

IMPORTANT: The Transmitter indicators will operate as described above if used with a TITAN Transmitter which uses PTT invert and Data non-invert. If these PTT or Data settings are changed to suit third party transmitters, then these LED's may stay on permanently and flash off when there is activity.

- **Modem Indicator**

  Modem (Yellow) - Indicates that the modem port is in use (off hook).

- **RS232/RS485 Indicators**

  TX (Red) - Indicates transmit data activity on the RS232/RS485 ports.

  RX (Green) - Indicates receive data activity on the RS232/RS485 ports.

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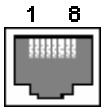
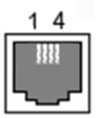
1.3.2 Connectors

All the connectors are of RJ45 type (8 pin - socket) except for the modem connector which is a RJ12 type (4pin - socket)

Pin numbers, socket view, viewed from the front of the unit.



RJ45



RJ12

Transmitter Interface Connector

The Master Controller allows the use of an external paging transmitter. The transmitter socket is shown in the figure below.

Pin No.	Name	Description
1	NC	Unused
2	NC	Unused
3	NC	Unused
4	PTT	Push To Talk/ Transmit (active-low-input)
5	GND	Ground
6	DATA	Digital Data (active-high-input)
7	NC	Unused
8	BUSY	Carrier detect (active-low-output)

RS232 Serial Port Connector (COM 1, 2, 3, 4)

Pin No.	Name	Dir	Description
1	DSR/RI	IN	Data Set Ready / Ring Indicator
2	CD	IN	Carrier Detect
3	DTR	OUT	Data Terminal Ready
4	GND		System Ground
5	RXD	IN	Receive Data
6	TXD	OUT	Transmit Data
7	CTS	IN	Clear to Send
8	RTS	OUT	Request to Send

RS485 Connectors (COM 4)

Pin No.	Name	Description
1	LINE+	RS485 A termination
2	LINE-	RS485 B termination
3	NC	
4	SGND	Signal Ground
5	NC	
6	NC	
7	NC	
8	NC	

Modem Connector (Line 1)

Pin No.	Name	Description
1	NC	
2	Tip	Tip
3	Ring	Ring
4	NC	

1.4 Rear Panel

1.4.1 Mains Input- Rear

This IEC connector is used to supply power to the unit. You can plug 110-240VAC 50/60Hz into here without the need to change power supplies or settings (input is auto-sensed). You will have been supplied with a mains lead in the Master Controller kit which will plug straight into this connector.

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2 INSTALLATION

2.1 Enclosure Mounting

Before mounting the enclosure, you will need to decide where to place the unit. The Master Controller can be desk mounted or installed into a standard 19 inch rack frame.

Your Master Controller package contains four adhesive rubber feet which can be placed on the underside of the unit if you wish to desk mount it.

If the unit is to be rack mounted you will need to attach a pair of rack ears. Your Master Controller package contains a set of rack ears and six screws. Use a Phillips screwdriver to attach the ears to the chassis.

Use the supplied IEC mains power lead to connect 110-240VAC 50/60 Hz supply to the Master Controller unit.

3 BASIC CONFIGURATION

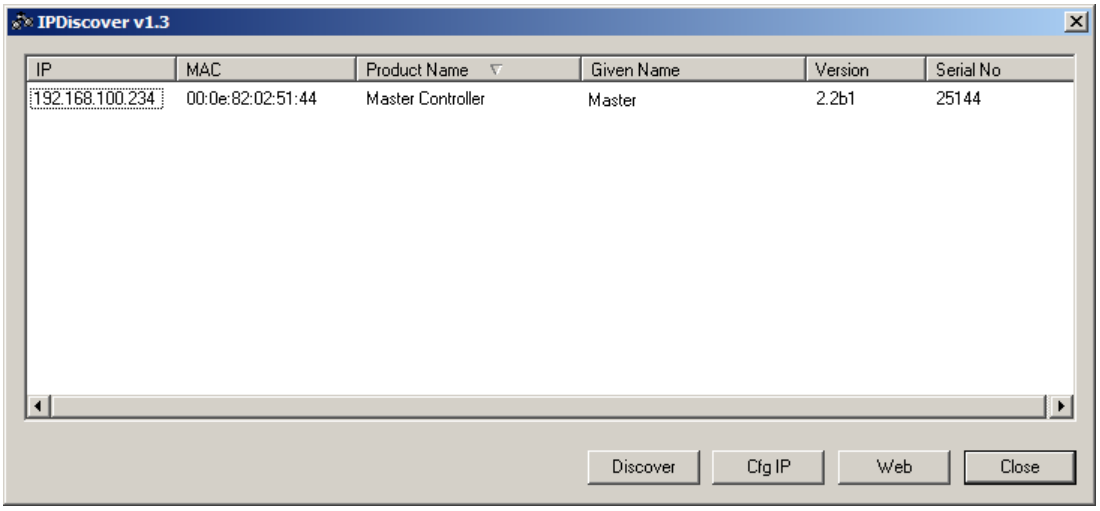
3.1 Connecting

In order to view the user interface, you must first connect to the Master Controller via its Ethernet port. There are two ways that you can connect to the unit.

1. Directly with a PC or laptop using the supplied crossover Ethernet cable (red RJ45 - RJ45).
2. By connecting the unit to a local area network (LAN) by connecting it to a spare port or to a switch/hub, using the supplied straight through Ethernet cable (blue RJ45 - RJ45).

Once you have plugged in the unit you can use a utility called “IPDiscover” to locate your Master Controller on the network and start a web session with the unit. This program is included on the CD included in the package. Run the program and you will see all TITAN products on the network.

NOTE: DHCP is enabled by default. If no DHCP server is found on the network, the default IP of 192.168.0.1 will be used.



In the example above, there is a Master Controller on the network at IP Address 192.168.100.234. If you would like to configure the IP settings of this unit you may click the “**CfgIP**” button. You can then turn off DHCP if it is not required or change the units IP Address.

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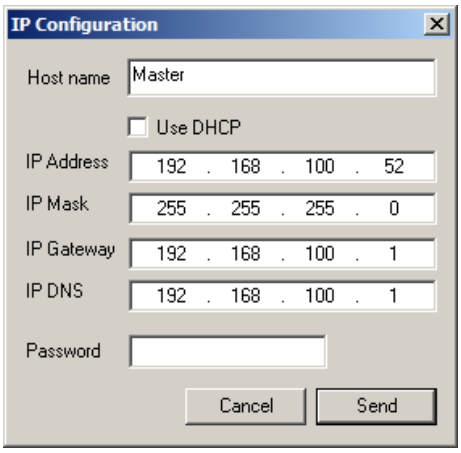
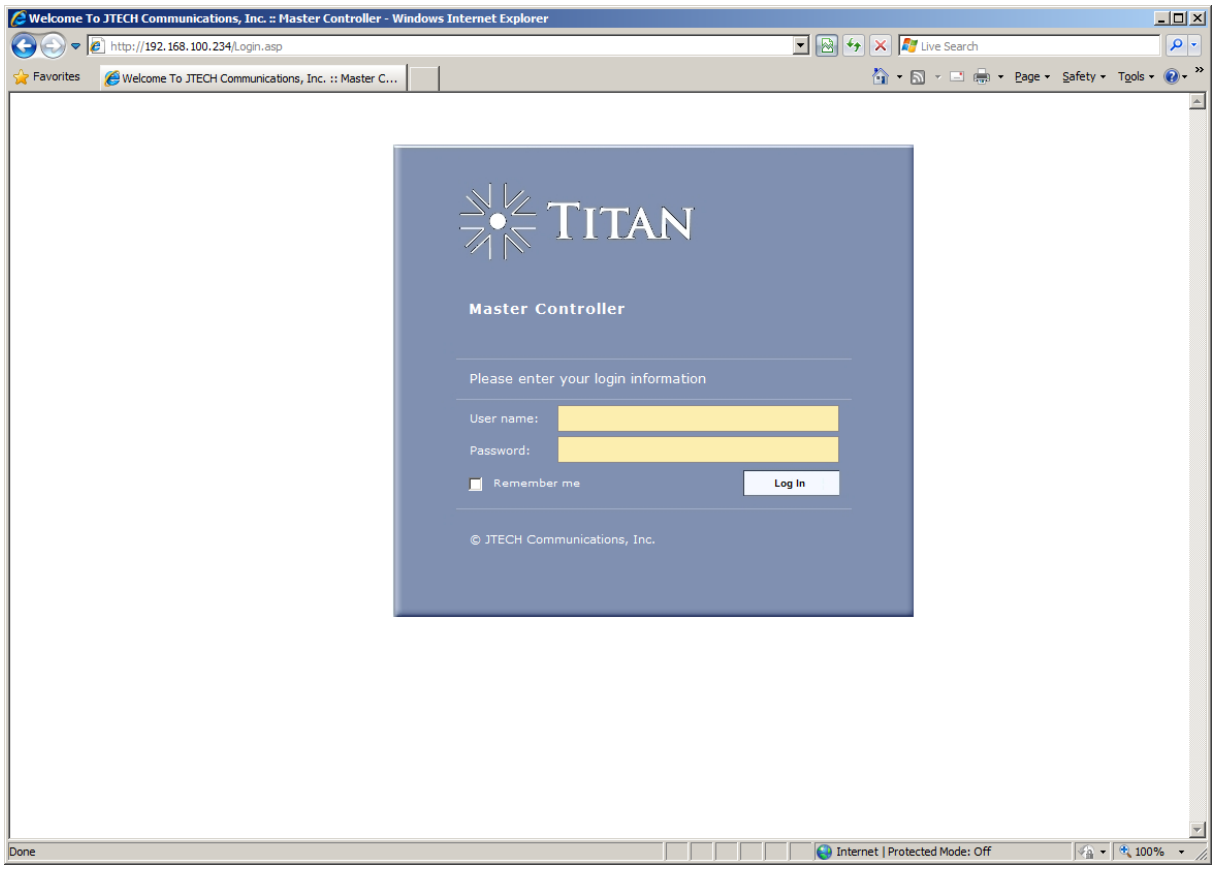


IMPORTANT: If you cannot connect to the Master Controller, you should set your PC's network card IP Address to be on the same subnet as the Master Controller. For example if the Master Controller is set to 192.168.1.100 you should set your PC IP Address to 192.168.1.x. (where x is 1-255)

NOTE: Default password is the same as the maint password, which should be left blank.

If you are happy with the IP settings, highlight the unit in the *IPDiscover* program and click the "**Web**" button. A browser window will open shortly displaying the login screen as shown below.



3.2 Logging In

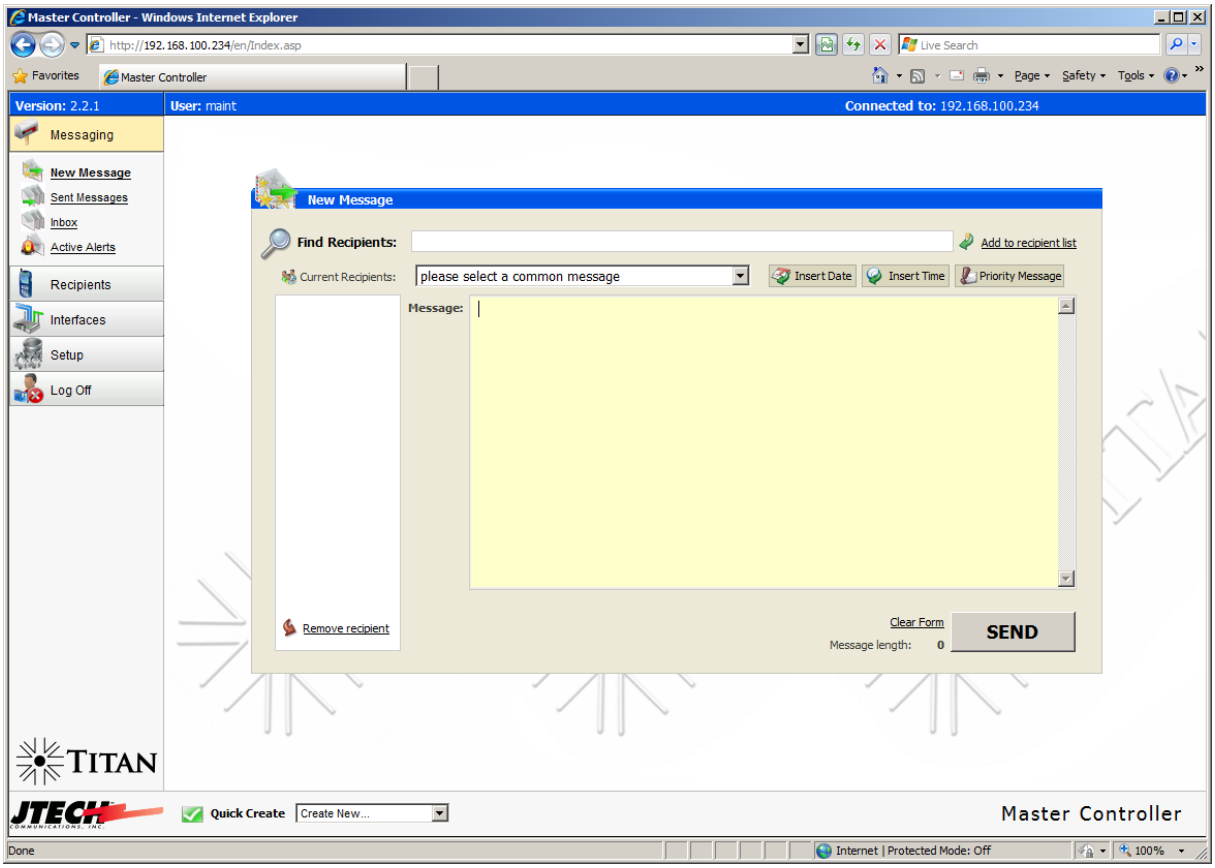
At the *Login Screen* you will be prompted to enter your details. The default login details are:

Username: *maint*

Password: *leave blank*

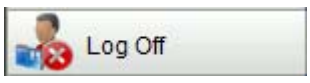
The *New Message Screen* will then be shown.

NOTE: The Master Controller has many features and protocols that are enabled by license key. As a result not all features explained in the manual may be available on your Master Controller. For more details contact your place of purchase.



3.3 Logging Out

To logout at any time, simply click the *Log Off* button.



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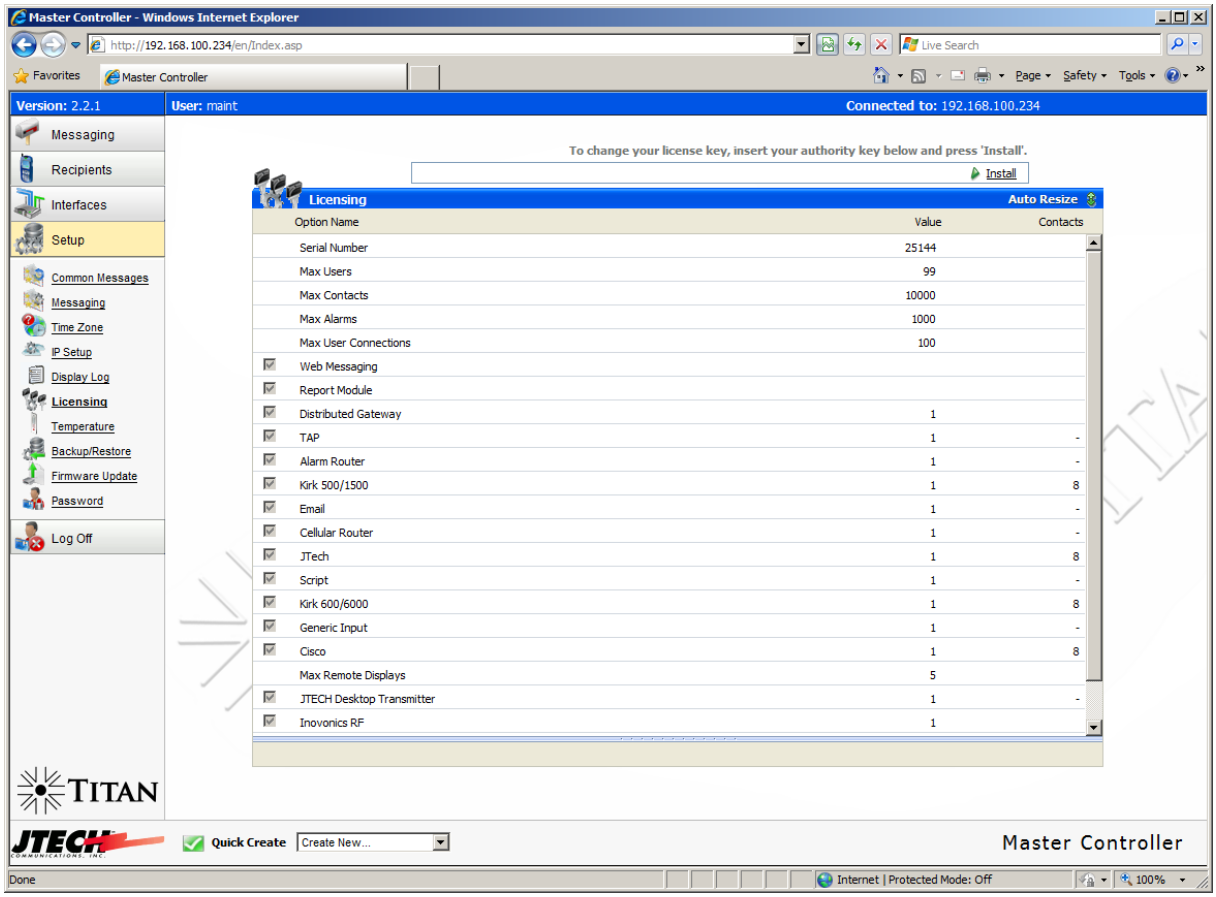
3.4 Entering a License Key

Your system will normally come preconfigured with a license key. If you buy additional features or protocols, you will need to enter in a new license key.

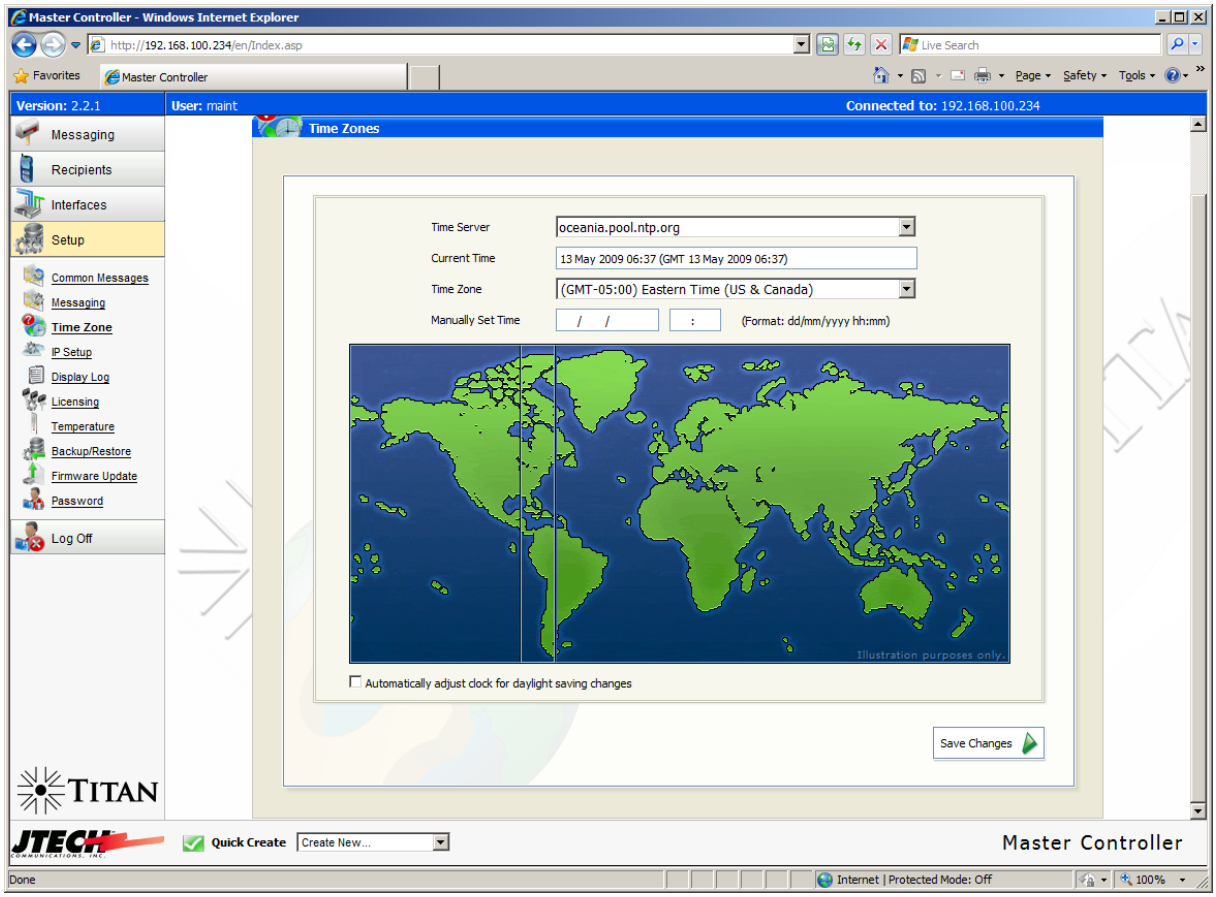
1. Click *Setup -> Licensing*
2. Paste the new license key into the text box and click Install .
3. You will be prompted to re-start the system in order to load the new settings.

NOTE: The number of contacts for some interface is also licensable. If you require more contacts please contact you place of purchase for an updated license.



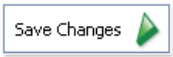
3.5 Regional Settings

As part of the initial setup, time and date settings need to be configured. Click *Setup* -> *Time Zone*.



- **Time server** – This is the time server on the internet that your Master Controller will periodically try to synchronize with in order to keep the correct time.
- **Current time** – Shows the current time on Master Controller
- **Time zone** – This setting helps the Master Controller calculate the current local time.
- **Manually Set time** – If your Master Controller is never connected to the internet you can manually set the time in this field in 24hr format.

WARNING: The time and date is not stored if the unit is turned off. If you are not using a time server, the time will need to be manually entered each time the unit is turned on.

When finished making changes on this page, click 

to save all new settings.

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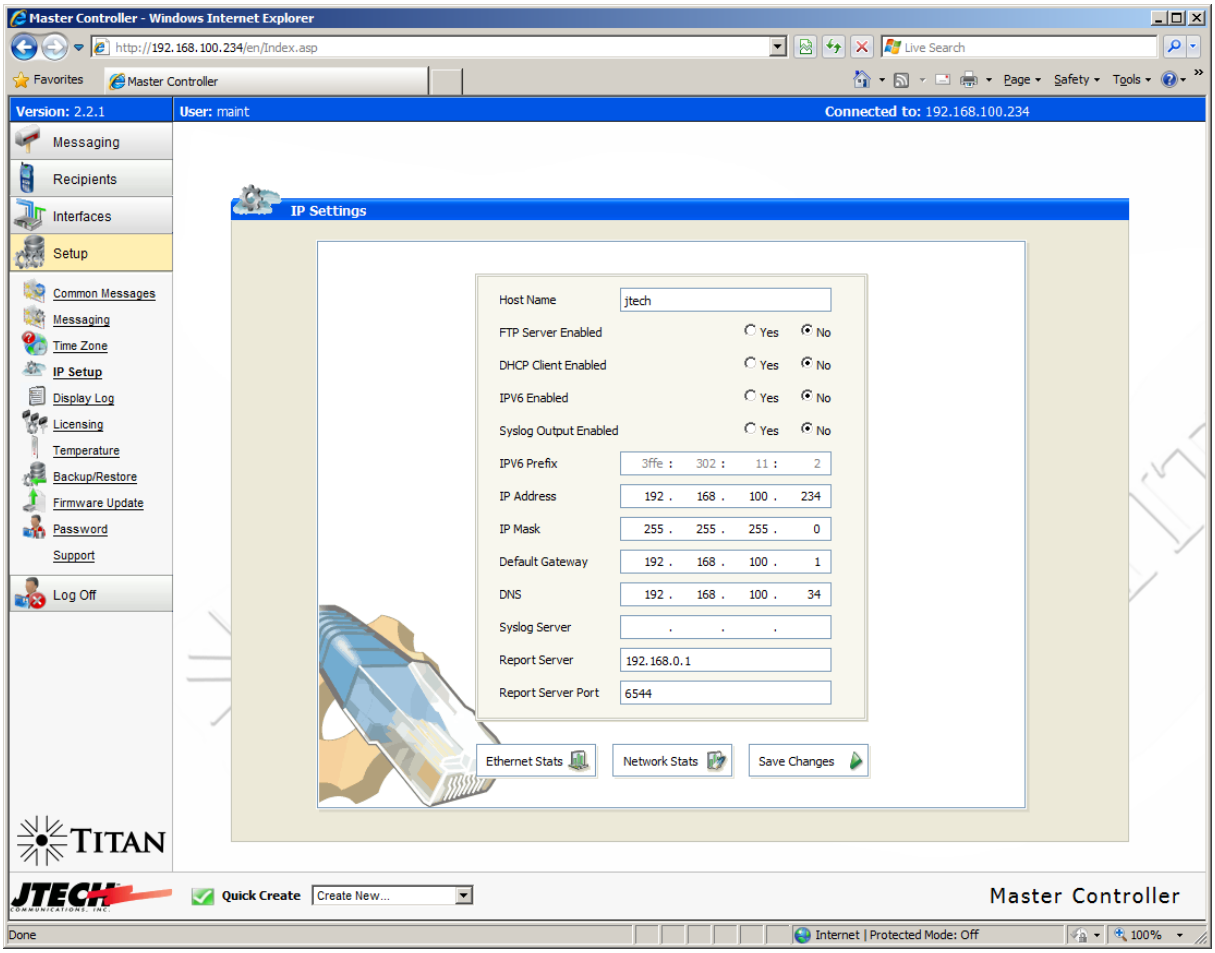
3.6 IP Settings

Next, it is a good idea to check that the IP settings of the unit are suitable. Click *Setup -> IP Setup*.



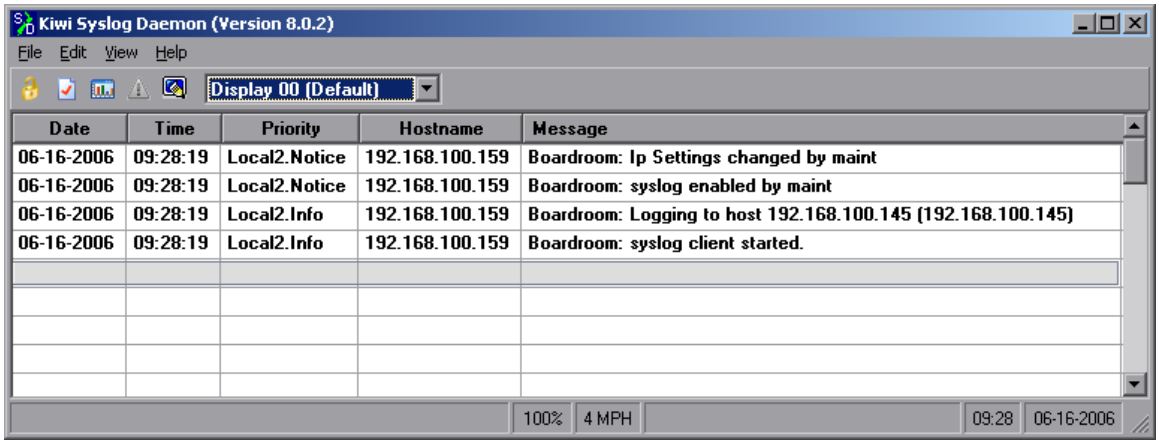
- **Host name** – Here you can give your Master Controller a name on the network. This name will show up in the *IPDiscover* utility. Giving a unique name allows multiple IP based TITAN series devices to be easily located and managed.
- **FTP server enabled** – Your Master Controller contains a simple ftp server which can be used to upload files such as scripts to the unit. Maint is the only user which has access to this server. This is usually best left set to *No* for security purposes.
- **DHCP client enabled** – By default this option is set to *Yes* which means that upon power up your Master Controller will attempt to contact a DHCP server on the network that it is connected to in order to gain an IP Address. The supplied *IPDiscover* utility can then be used to locate units on your network.

  In some situations, such as if your network has no DHCP server or when interfacing with the TITAN Telephone Router or SmartPage-E, the Master Controller may need a fixed IP Address. In this case you will need to fill in the *IP Address*, *IP Mask, Default Gateway* and *DNS* field below.

- **IPv6 enabled** – IPv6 (Internet Protocol Version 6) is the latest revision of the Internet Protocol. IPv6 was designed as an evolutionary set of improvements to the current IP Version 4. The most obvious improvement in IPv6 over the IPv4 is that IP addresses are lengthened from 32 bits to 128 bits. This extension anticipates considerable future growth of the Internet and provides relief for what was perceived as an impending shortage of network addresses. Your Master Controller supports IPV6 for future compatibility. This field is normally set to *No*.
- **Syslog enabled** – Syslog is a simple way of performing logging of some of the Master Controller's activities. This includes all messages processed, when users log on/off, when a gateway goes up/down or when certain settings are changed such as IP Settings.

  The Master Controller will need a network connection and a Syslog server on the network in order to use this function. If this function is required enter the IP Address of the Syslog server in the field below.

  The supplied CD contains a freeware Syslog server that you can use to log these messages.


Kiwi Syslog Daemon (Version 8.0.2)
File Edit View Help
Display 00 (Default)
Date Time Priority Hostname Message
06-16-2006 09:28:19 Local2.Notice 192.168.100.159 Boardroom: Ip Settings changed by maint
06-16-2006 09:28:19 Local2.Notice 192.168.100.159 Boardroom: syslog enabled by maint
06-16-2006 09:28:19 Local2.Info 192.168.100.159 Boardroom: Logging to host 192.168.100.145 (192.168.100.145)
06-16-2006 09:28:19 Local2.Info 192.168.100.159 Boardroom: syslog client started.
100% 4 MPH 09:28 06-16-2006

- **Reporting Server/Reporting Server Port –** See the Configuration Examples section of this manual for details on setting on Reporting.
- **Ethernet stats** – Click this button to view statistics regarding the Ethernet port.
- **Network stats** – Click this button to view statistics regarding the network.

When finished making changes on this page, click

to save all new settings.

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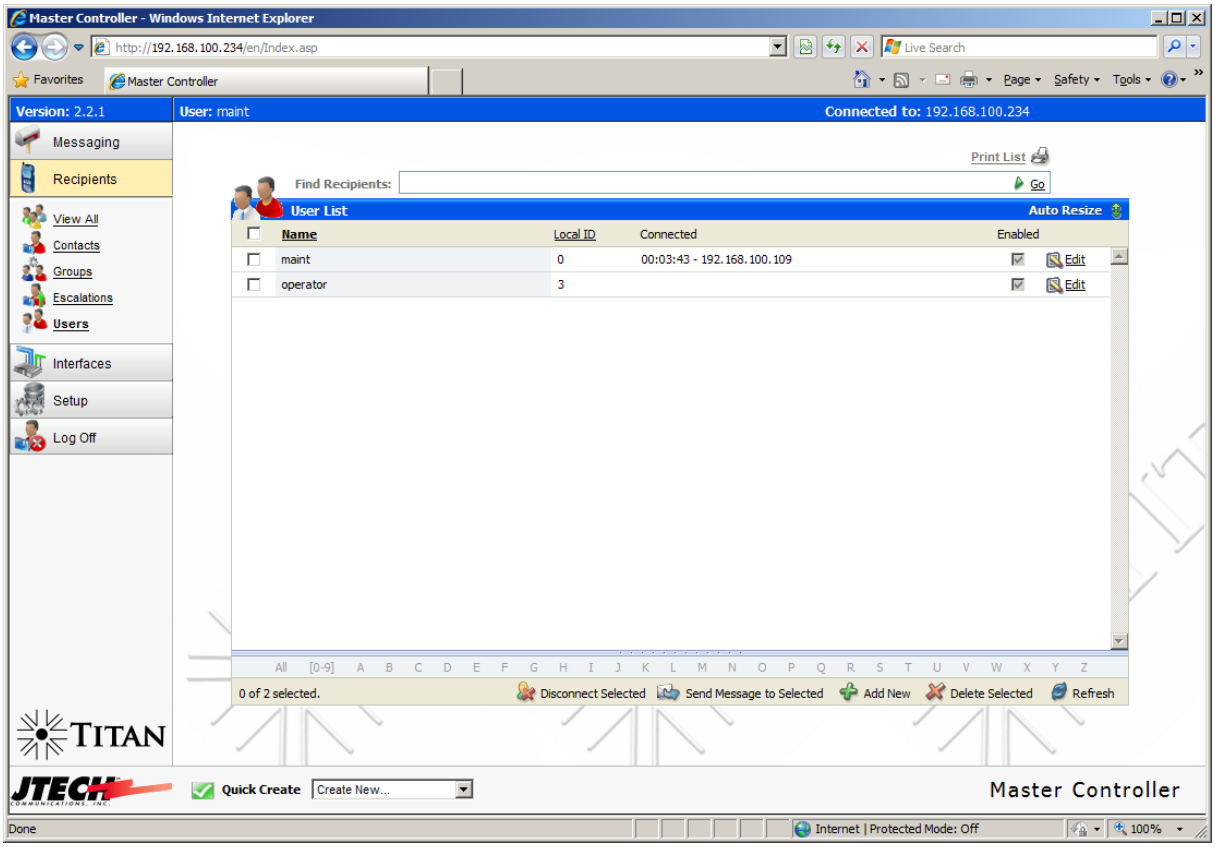
3.7 Setting up Users

Users have access to log into the Master Controller and perform certain tasks depending on the privileges that they have been given. By default the only user installed is *maint*, which has full access to all areas.

NOTE: In order to add more users you will need a license key that allows for more than 1 user on the system. See the Setup -> Licensing screen to view the current licensing restrictions.

Click on *Recipients* -> *Users* to see a list of currently setup users.

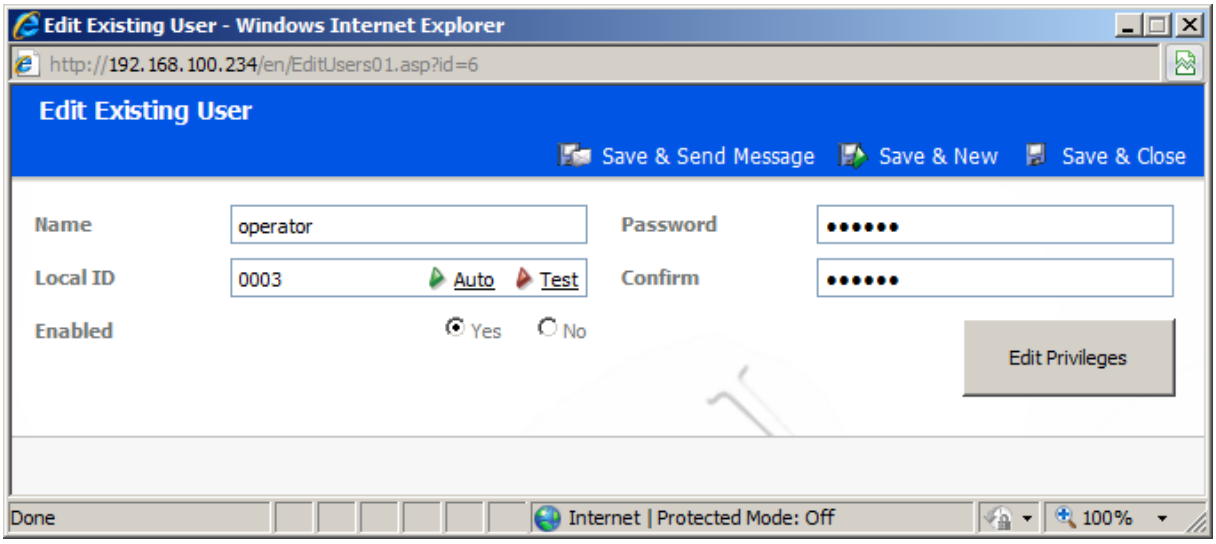


To edit and existing user click the Edit link next to that user.

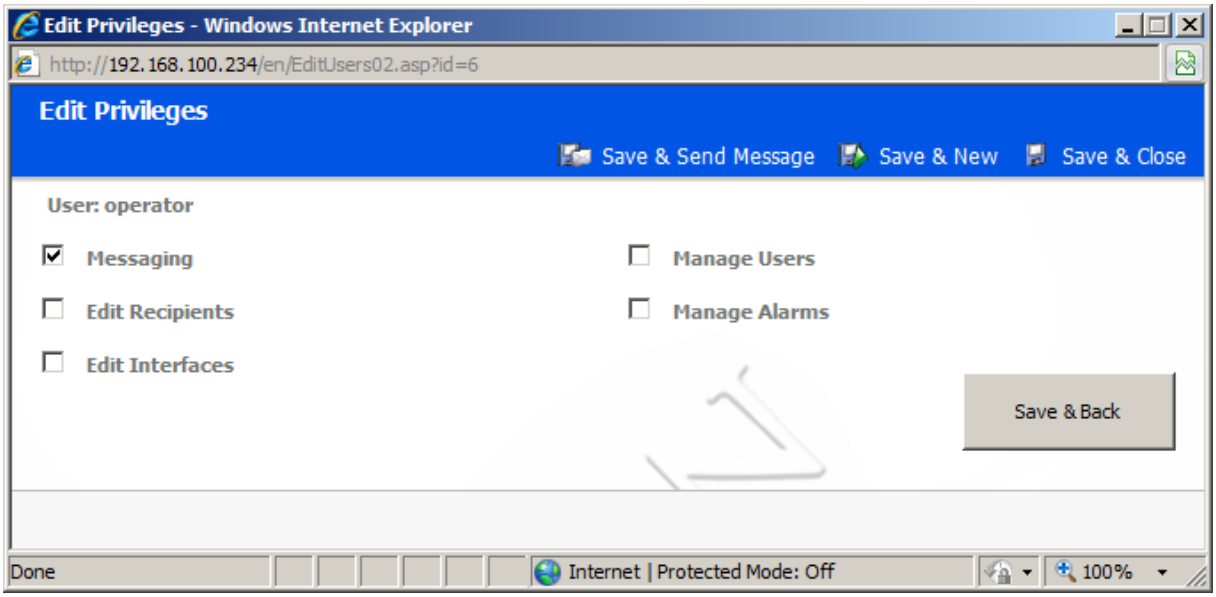
To delete a user, click the Delete Selected button.

To send a message to another user, click the Send Message to Selected button. The message will appear in the users *Inbox*.

To add a new user, click the Add New button. The following window will be shown.



Enter the *Name* and *Password* for the new user you wish to setup and then click the *Edit Privileges* button. The following screen will then be shown.



NOTE: Some of the privileges shown above wont been shown unless the Master Controller has certain licenses installed.

Tick the options that this new user should have access to. The table on the next page explains in more detail the access rights for each tick box. When finished, click the Save & Close button.

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	Messaging	Edit Recipients	Edit Interfaces	Manage Users	Manage Alarms	Nursecall	Staff Allocation
Send Message	✓						
Sent items	✓						
View sent items of others				✓			
Inbox	✓						
Recipients: Delete		✓					
Create		✓					
Edit		✓					
Gateways: Delete			✓				
Create			✓				
Edit			✓				
Users: Delete				✓			
Create				✓			
Edit				✓			
Disconnect session				✓			
View active alarms					✓		
Create and edit ADM inputs			○		✓ ○		
Common messages: Delete	✓						
Create	✓						
Edit	✓						
Settings: Messaging			✓				
IP			✓				
Regional		⮙	⮙				
Licensing		⮙	⮙				
Temperature		⮙	⮙				
Database Tools		⮙	⮙				
Update Firmware		⮙	⮙				
Site Survey			✓				
Change own password	✓	✓	✓	✓	✓		
View Staff Allocation Menu							✓
View Nursecall Menu						✓	

Users require both the *Messaging* and *Manage Users* privilege to view the sent items of others.

○ Users require both the *Edit Interfaces* and *Manage Alarms* privilege to create/edit alarm inputs.

⮙ Users require both the *Edit Recipients* and *Edit Interfaces* privilege to perform these actions.

❖ **NOTE: Most users will not need the "Edit Users" privilege. This will not allow a user to disconnect users or create users.**

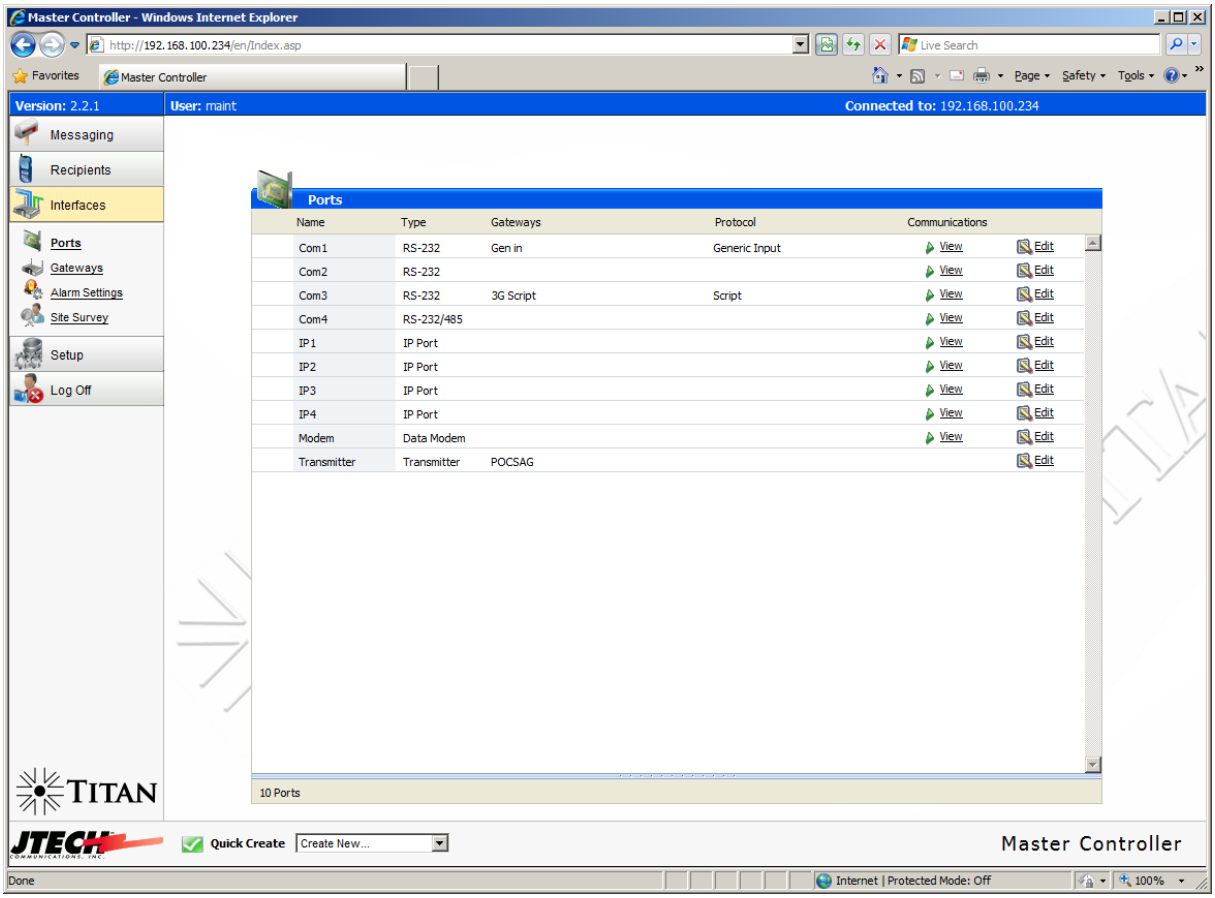
3.8 Setting up Ports

A myriad of external devices and third party products can communicate with the Master Controller via its physical “Ports”. The data may be in formats such as RS232, RS485, TCP/IP, POCSAG or via modem

In order to communicate with another device via its “Ports”, Master Controller must first be told some basic information about the connection such as data speed, bandwidth, baud rate etc.

Click on *Interfaces* -> *Ports* to see the list of ports.

To edit the properties of a port, click the Edit link.



There are four different port types available in a Master Controller:

1. **RS232/485** – If data is to come in or out of one of the Com ports, the port will need to be configured here. The properties on this page will need to match that of the equipment you are connecting to. Once the settings are correct, click the Save & Close button.

   IMPORTANT: Com4 can be set to RS232 or RS485.

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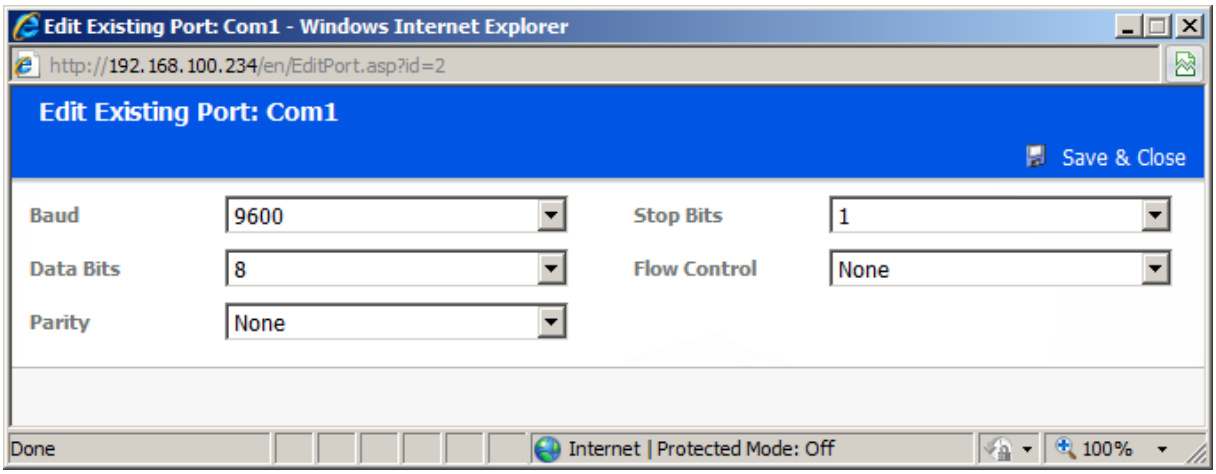


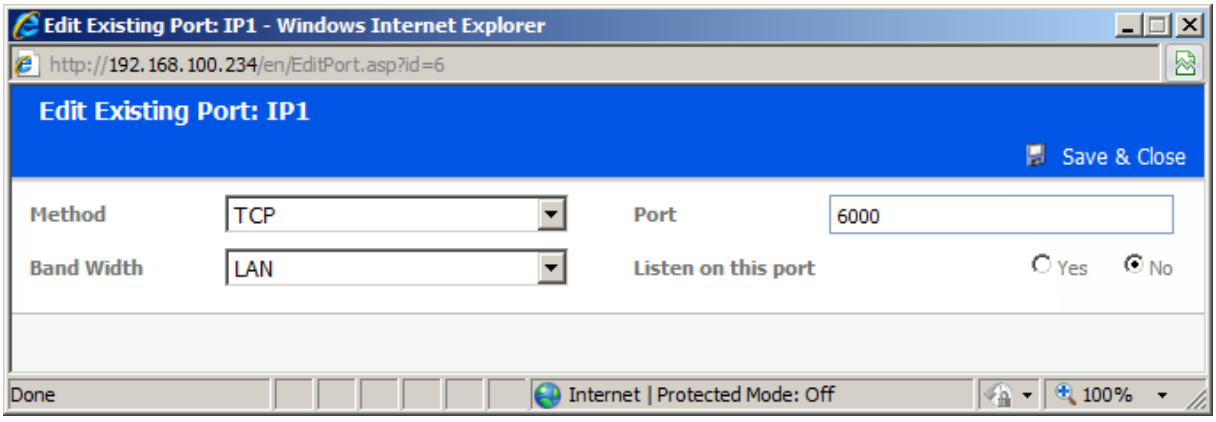
2. **IP** – The IP port will be used if you are interfacing with products such as the TITAN SmartPage-E using the Ethernet connection.

   In most cases *Method* will be set to TCP. In the *Bandwidth* drop down box select the connection speed between the Master Controller and the equipment it is being interfaced to.

   The *Port* refers to the port that the Master Controller will use for TCP/IP connections. This must match that of the external equipment. If the port you are configuring is an input, select *Yes* for the *Listen on this port* field.

NOTE: Internet based messaging protocols like WCTP, SNPP, Cisco, Kirk 600/6000, SMTP (email), are implemented directly upon TCP/IP sockets, and thus do require a port to be configured.

Once the settings are correct, click the Save & Close button.



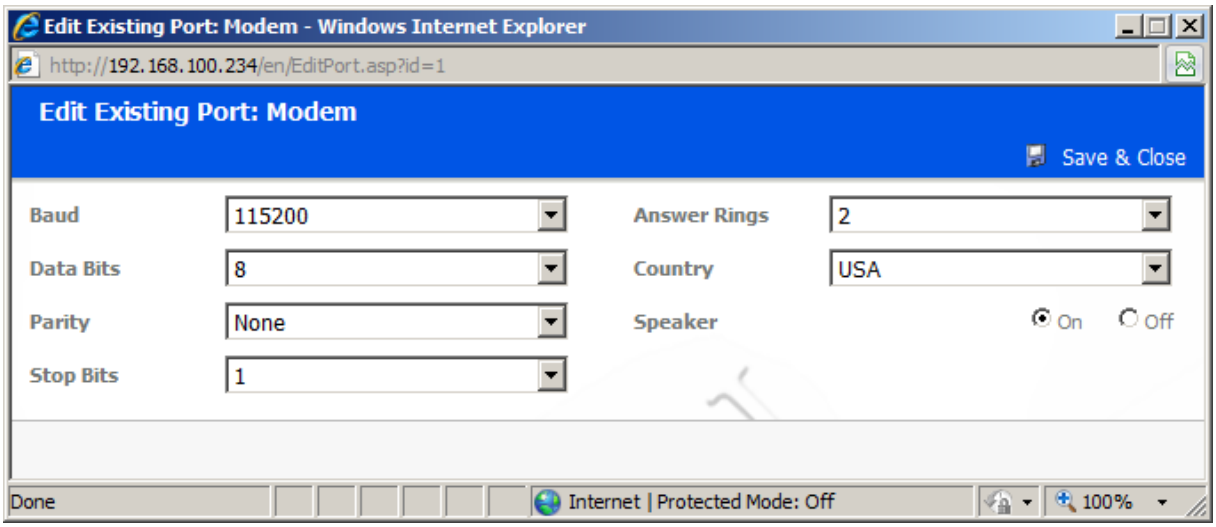
3. **Modem** – Your Master Controller contains an internal modem which can be used to dial out to a remote system using the TAP protocol.

   The *Baud*, *Data bits*, *Parity* and *Stop bit* fields must match that of the other system that is being dialed.

   If the Master Controller unit is being dialed for TAP in, the *Answer Rings* field determines how many rings it takes before the Master Controller will pick up the line.

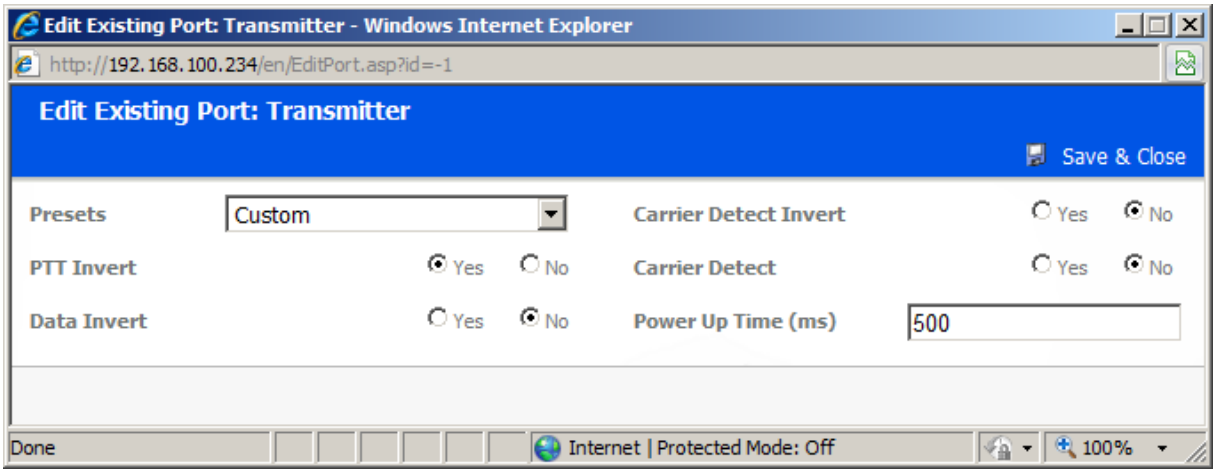
To ensure compliance with regulatory requirements, the country that the Master Controller resides in must be selected in the *Country* field.

The *Speaker* option can be used to give an audible indication of line activity. You will be able to hear the modem dialing, answering calls and handshaking if this option is enabled. Once the settings are correct, click the Save & Close button.



4. **Transmitter** – This port will be used if the Master Controller is being connected directly to a paging transmitter.

   If connecting to a standard JTECH transmitter, select *Standard Transmitter* in this field. If using a non-Jtech transmitter select *Custom*. If *Custom* is selected, you will then be able to configure all properties of the transmitter. Consult the documentation that came with your paging transmitter for more information on the required settings. Once the settings are correct, click the Save & Close button.



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3.9 Setting up Gateways

Whilst the *Ports* screen explained above is used to configure basic information about the connection, the *Gateway* screen is used to configure protocol specific settings.

A *Gateway* uses a *Port* to implement the various input and output messaging protocols upon. Thus providing physical / communications layer independence. Each gateway is of a particular protocol type. The gateway maybe either input, output, or both if the protocol supports concurrent sending and receiving. (e.g. SMS, Email etc)

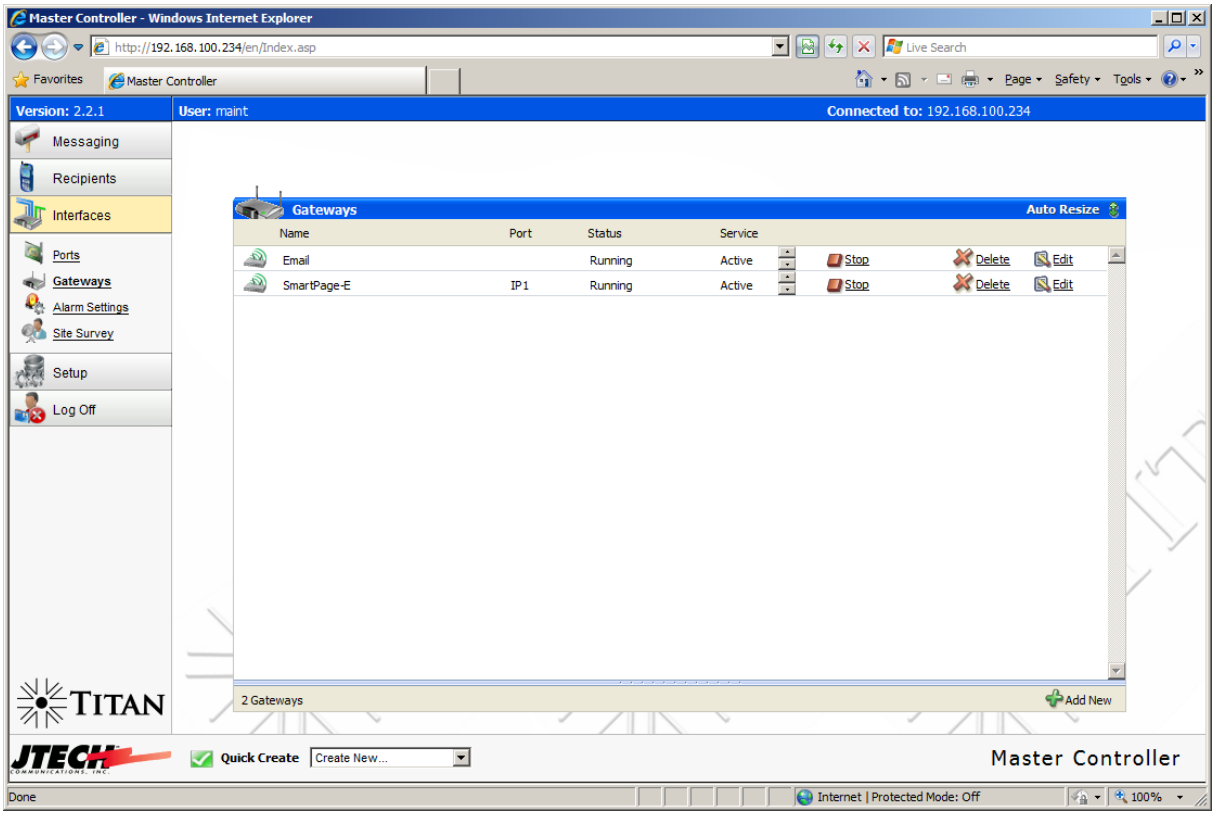
NOTE: For a list of gateways that the Master Controller supports, see the Technical Specifications section of the Appendix.

The Master Controller is essentially a messaging router – it can take *in* any of the input protocols and send it *out* as any of the output protocols.

Click on *Interfaces* -> *Gateways* to see the list of gateways. In the example below there are two gateways configured.

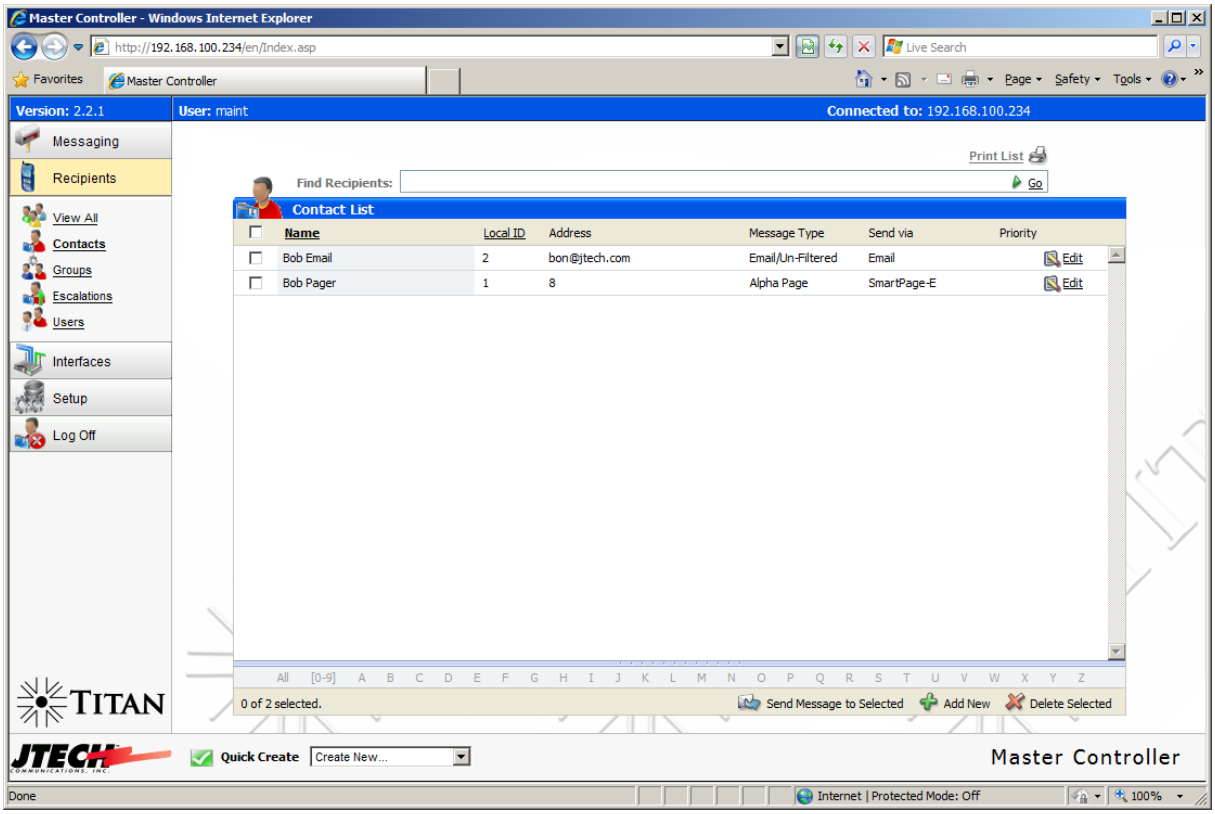
At any time, a gateway can be individually started/stopped, deleted or edited by clicking the links next to each.

To create a new gateway, click the Add New button. Examples of how gateways are configured are outlined later in the *Gateway Configuration Examples* section later in this manual.



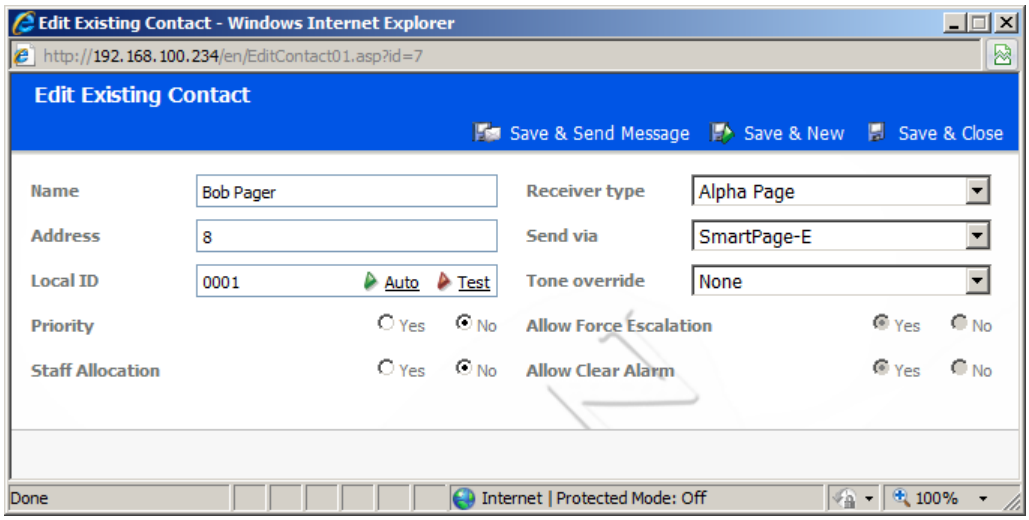
3.10 Setting up Contacts

A contact is a person or device setup in the Master Controller database that can be sent messages. To administer contacts, click *Recipients* -> *Contacts*.



Create a new contact by clicking the

button at the bottom of the page. A new window will be shown where you will be able to enter the contact details in. The example below shows a person named Bob, who is wearing an alphanumeric POCSAG pager on cap code 8.



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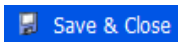
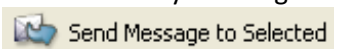
NOTE: The "Send Via" drop down box contains a list of all Gateways configured on the Master Controller. This setting determines how messages to this contact are routed.

After you have entered all the details, click the 

button. The new entry will now be shown on the contact screen. Try sending a test message to the new contact by highlighting the row and pressing the 

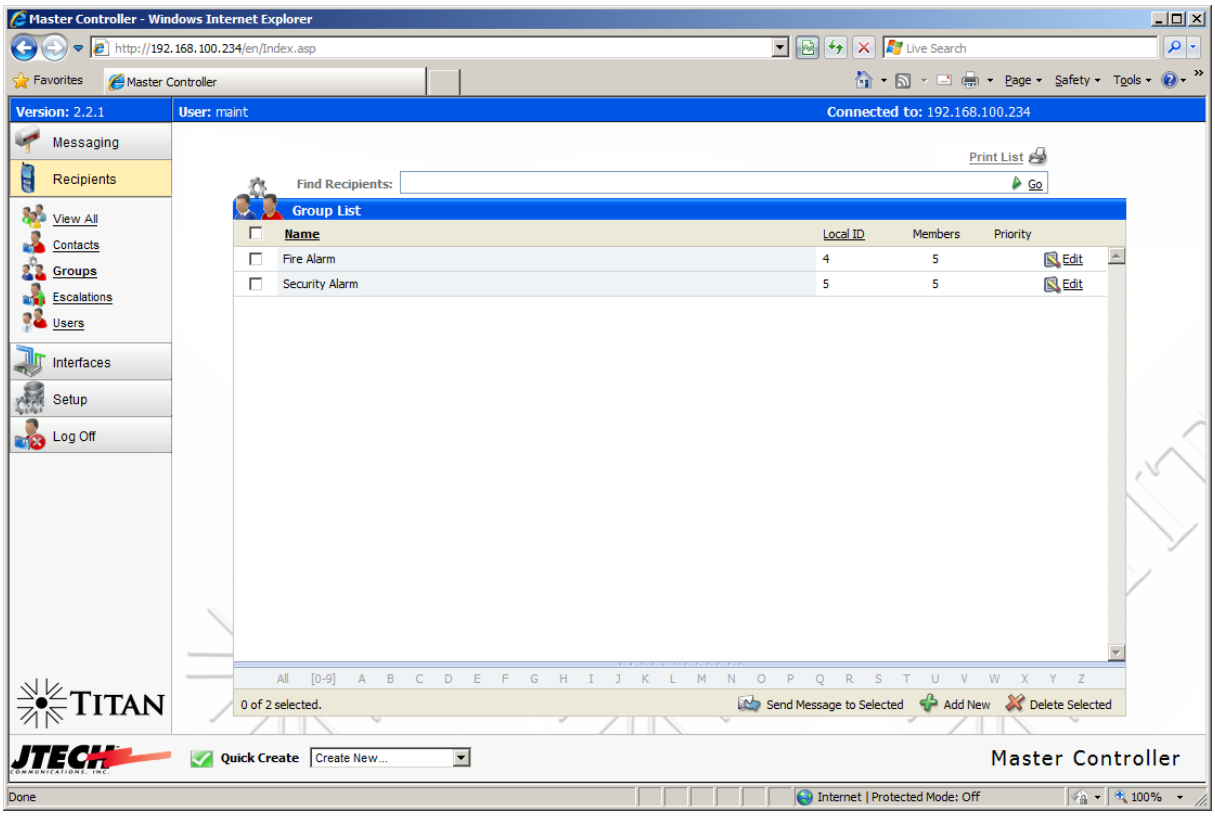
button.

NOTE: You can sort by *Name* or *Local ID* by clicking the column heading.

3.11 Setting up Groups

A *Group* is a collection of contacts, users, escalations or other groups. This allows easy dispatch of messages to multiple recipients by selecting just one group.

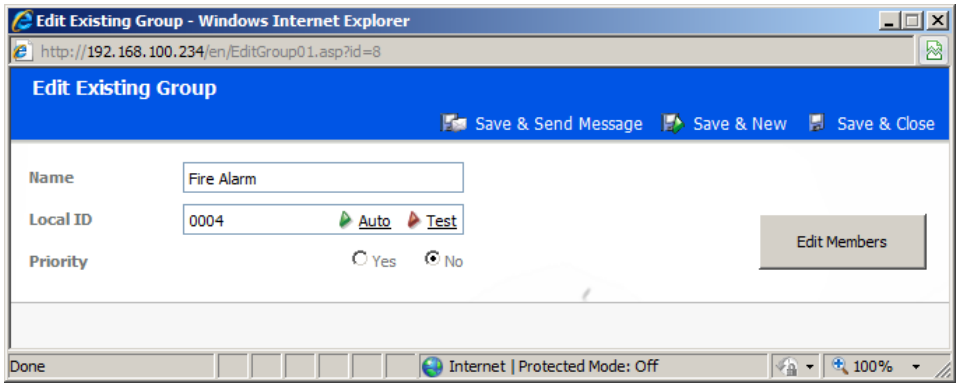
To administer contacts, click *Recipients* -> *Groups*.



Create a new group by clicking the

button at the bottom of the page.

1. A new window will be shown where you will be able to enter the name of the group, local id and priority. Then click the *Edit Members* button.



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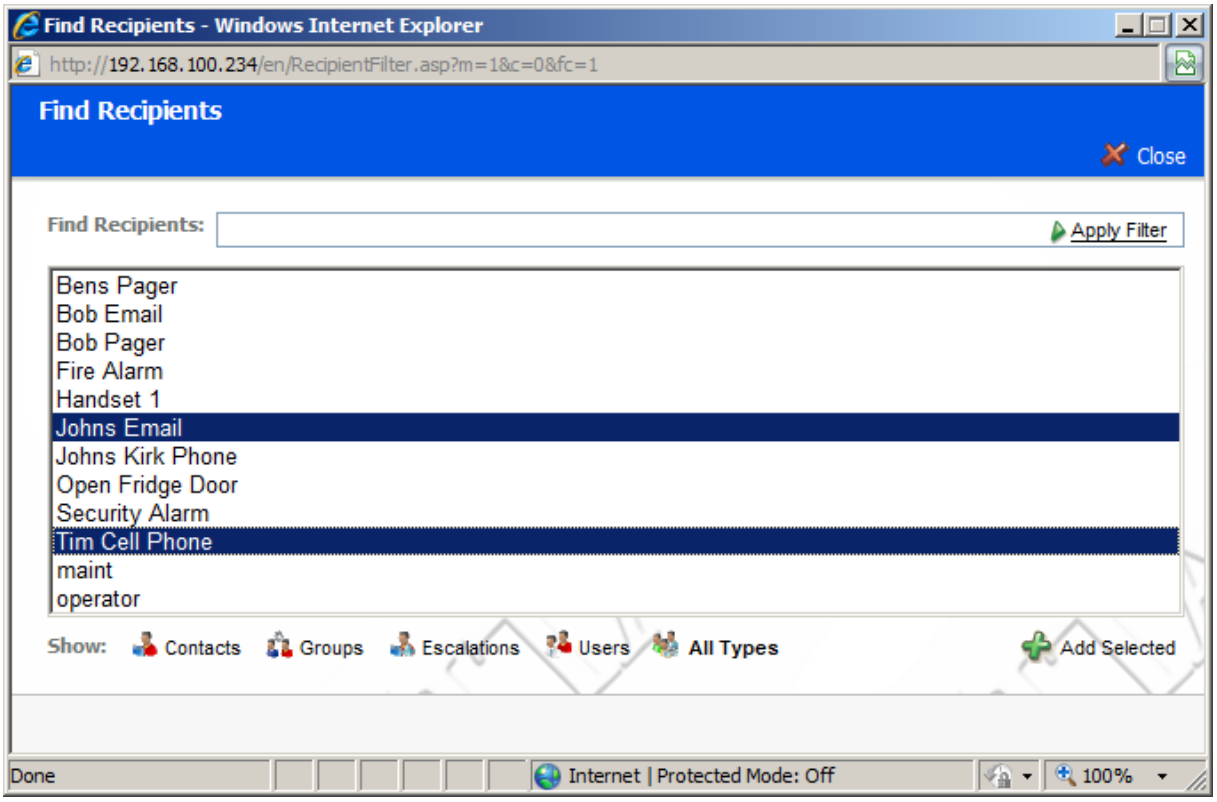
2. You will then be prompted to select the recipients for this group. Type the name of the recipient followed by the Apply Filter button.

NOTE: You cannot search by Local ID in this field – you must search by the assigned name.

3. In the example below we will choose two contacts named John and Tim.

NOTE: Hold the [CTRL] key to multi-select recipients.



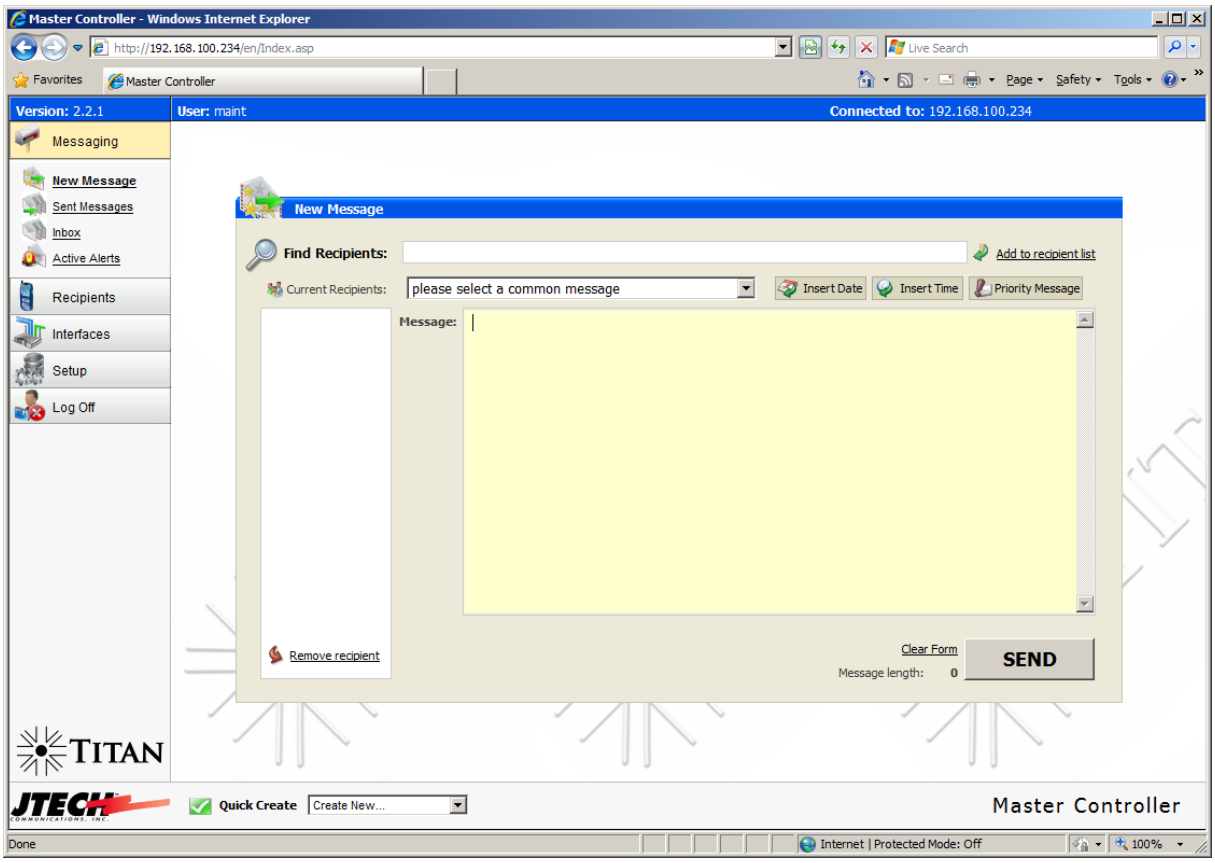
NOTE: You can filter the recipient list by contact, group, escalation, user or all types by clicking the relevant buttons.

4. After selecting the required recipients click the Add Selected button, followed by Close followed by Save & Close.
5. The group will then be shown on the *Group Screen*.

3.12 Sending a Message

Messages can be manually sent to any recipient from the Master Controller's web interface.

To test this, click *Messaging -> New Message*.



1. In the *Find Recipients* field, start typing the name of the recipient you wish to contact. Any matches will show up in a list. You can see in the example below that we have started to type "Jo" and the matches "Johns Email" and "Johns Pager" have been found.
2. Your mouse or the up/down/enter keys can be used to select the required recipient from the matching results. Once selected, it will be added to the *Current Recipients* list.

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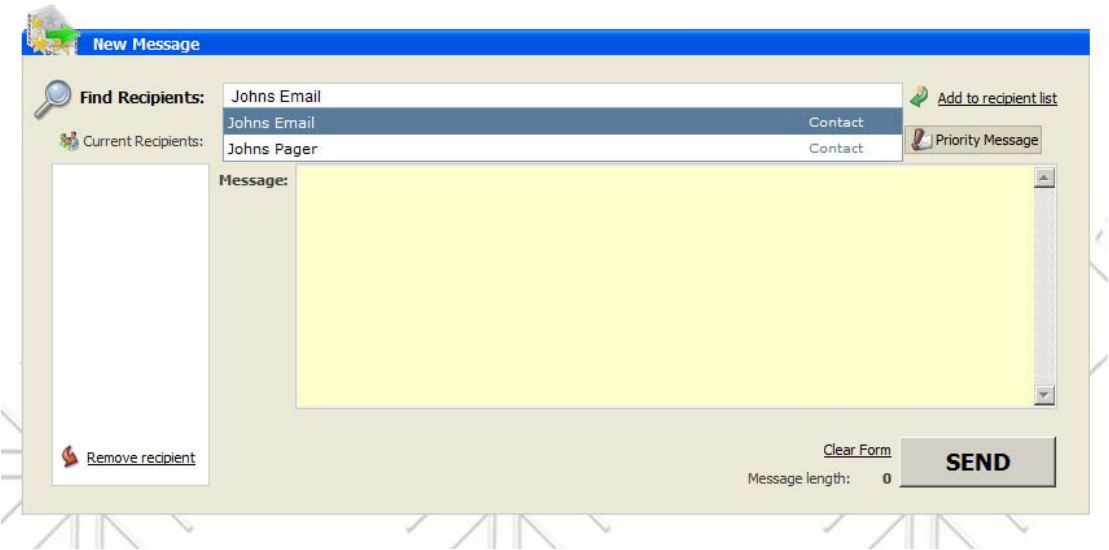
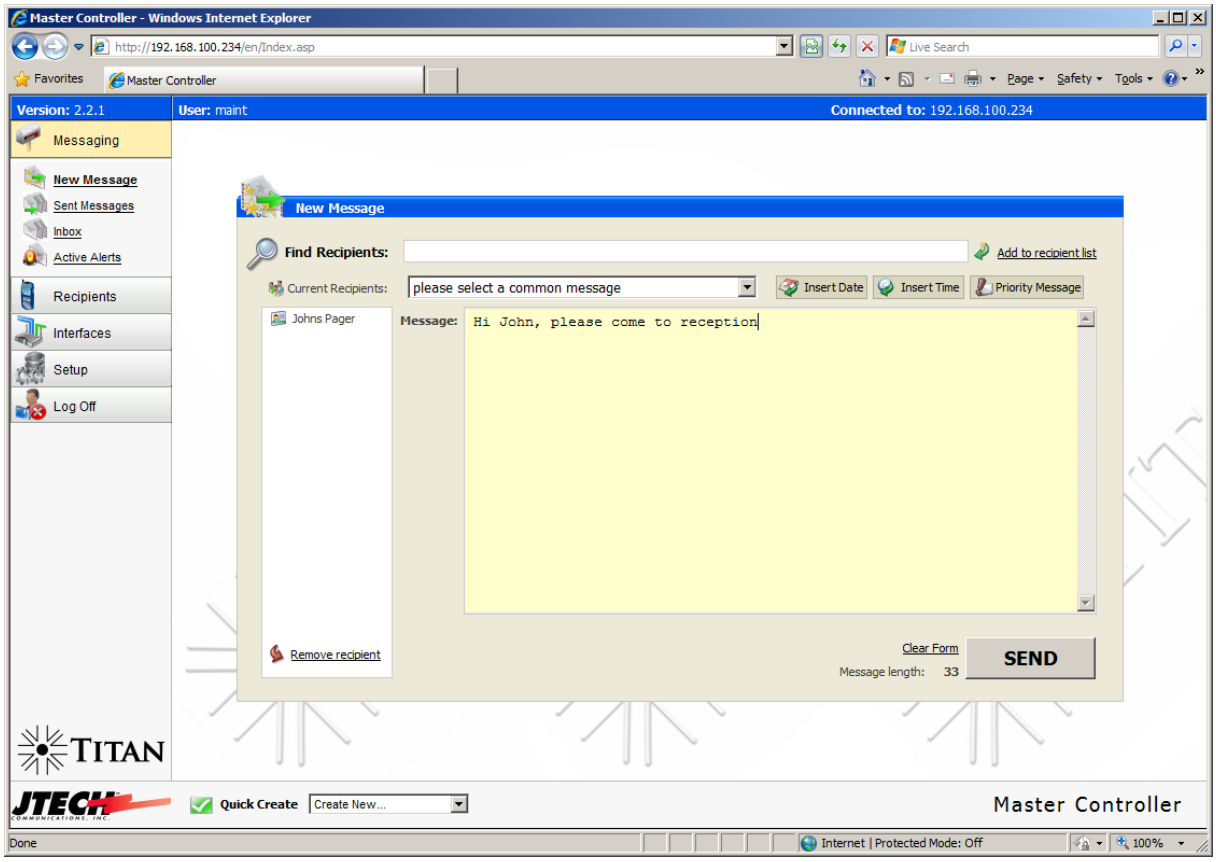


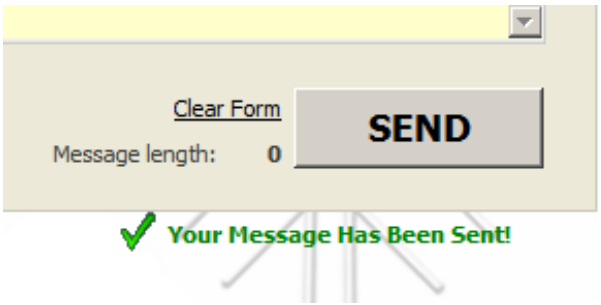
NOTE: You can also type a Local ID in the *Find Recipients* field. The Master Controller will look up the Local ID and find the recipient it corresponds to.

3. A message can now be typed to the recipient. If required, the current date or time can be inserted into the message by clicking the Insert Time or Insert Date buttons.

4. If the message is important, click the Priority Message button. This will make the message jump to the front of the message queue and it will be sent with an urgent flag.



5. Click the *Send* button to send the message.
6. After a short time, a popup will appear under the *Send* button, giving confirmation that Master Controller has attempted to send the message. For detailed status information and any possible error messages, check the *Sent Messages* screen.



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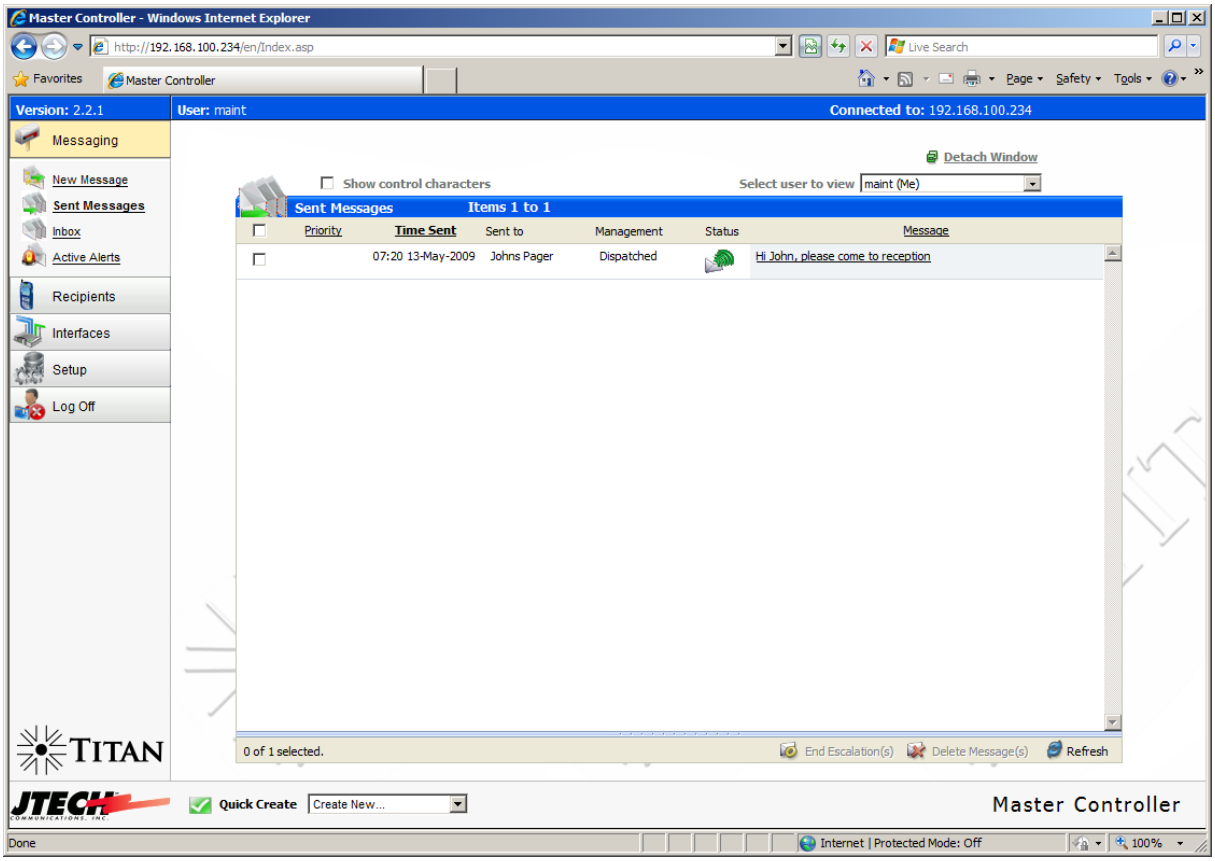
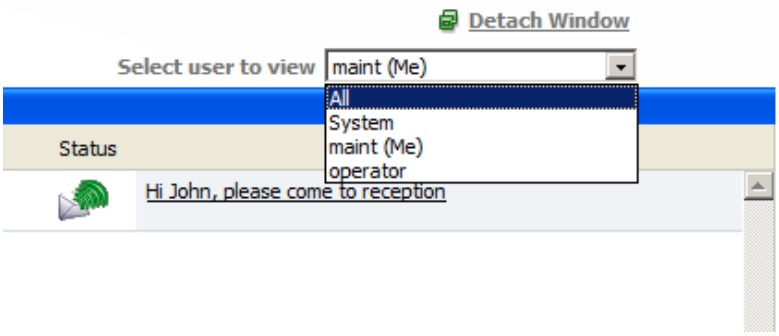
3.13 Viewing Sent Messages

A list of sent items is kept in the *Sent Messages* screen. To view these at any time, click this click *Messaging -> Sent Messages*.

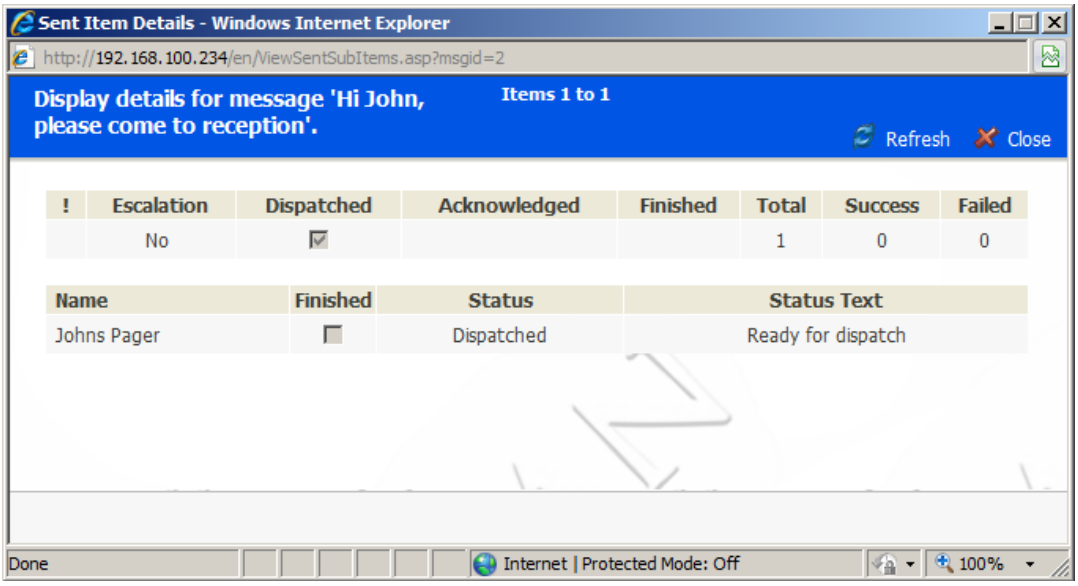


1. To view all messages sent by the unit, choose *All* in the "*Select user to view"* drop down box. You can also filter sent messages by selecting *System* (automated messages) or by choosing individual users.

NOTE: A maximum of 20 completed messages per user are shown in the *Sent Messages* screen.



2. Double click on any message to view all of its details such as the status or error information.


Sent Item Details - Windows Internet Explorer
http://192.168.100.234/en/ViewSentSubItems.asp?msgid=2
Display details for message 'Hi John, please come to reception'.
Items 1 to 1
Refresh
Close
! Escalation Dispatched Acknowledged Finished Total Success Failed
No 1 0 0
Name Finished Status Status Text
Johns Pager Dispatched Ready for dispatch
Done
Internet | Protected Mode: Off
100%

NOTE: If a message has been sent to multiple recipients, this screen will show the status for each individual.

3. If a message is in the *Escalating* state, it can be manually canceled by selecting the message and then pressing the End Escalation(s) button.

4. The Detach Window link is a useful option as it allows the *Sent Messages Screen* to be detached. If you have a dual monitor setup, the detached window can be maximized on one screen while other programs can be opened in the other screen.

5. The "Show control characters" tick box can enable display of non-printable characters within sent messages.

6. Various icons will be shown under the *Status* column. The meaning for each icon is described below.

- This message has been received or read

- You have replied to this message

- This message has been dispatched

- This message is queued

- Sending of this message failed

- This message has been sent

NOTE: Not all devices that are sent messages, support "receive" or "read" notification.

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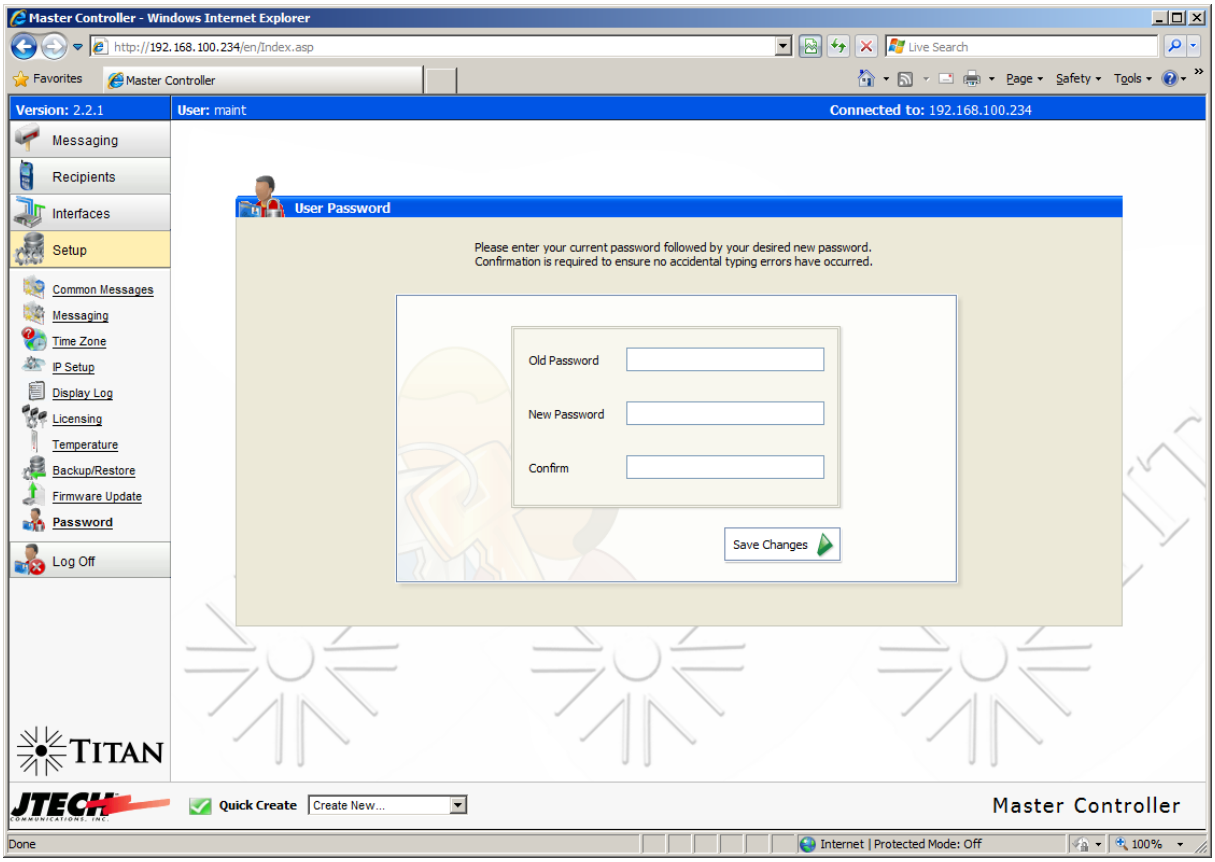
3.14 Changing Your Password

If you need to change your password, click *Setup* -> *Password*. This option is used to change the password for the currently logged in user.



1. Simply enter your old password followed by the new password two times.
2. Click the

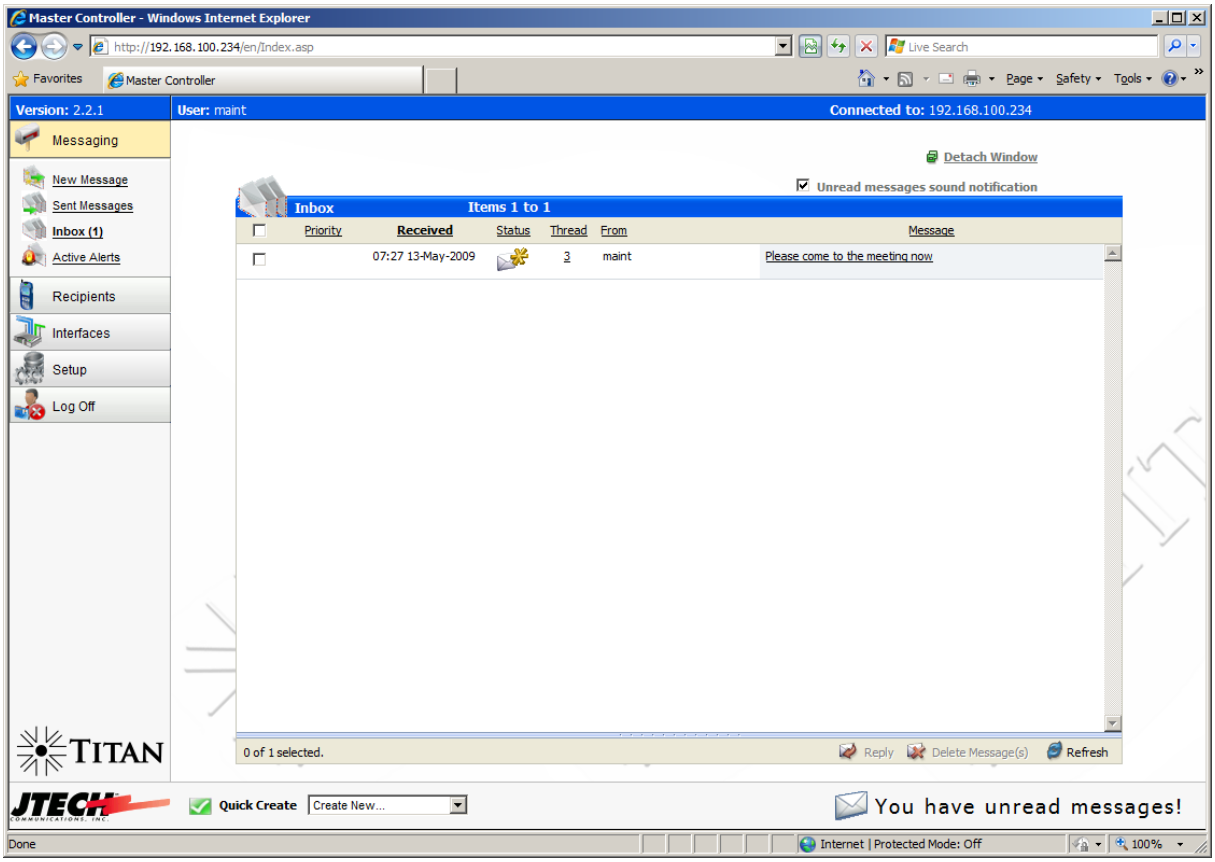
button to save the new password.

4 ADVANCED CONFIGURATION

4.1 Inbox

The *Inbox* is where messages sent to you as a user, are stored.

To view your Inbox, click *Messaging -> Inbox.*



For example if you were logged in as *maint* and you manually sent a message to a recipients email address, that message would appear on their computer as an email. This recipient can answer your message by selecting reply, typing a message and selecting send. This message reply would then appear in your *Inbox*.

1. When you have unread messages waiting in your *Inbox*, an alert in the bottom right corner will show "*You have unread messages*" as can be seen below. A sound will also play through the computer speakers if the "Unread messages sound notification" tick box on the *Inbox Screen* is checked. The number of unread messages will also be shown in brackets next to *Inbox* under the *Messaging* menu bar.

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2. To see all of the message details, simply double click a message. The details will be shown in a new window. You can even click the Reply button to send a message back to the sender.
3. Various icons will be shown under the *Status* column. The meaning for each icon is as follows.

   - This message is unread

   - This message has been read

   - You have replied to this message

4. The Detach Window link is a useful option as it allows the *Inbox Screen* to be detached. If you have a dual monitor setup the detached window can be maximized on one screen while other programs can be opened in the other screen.

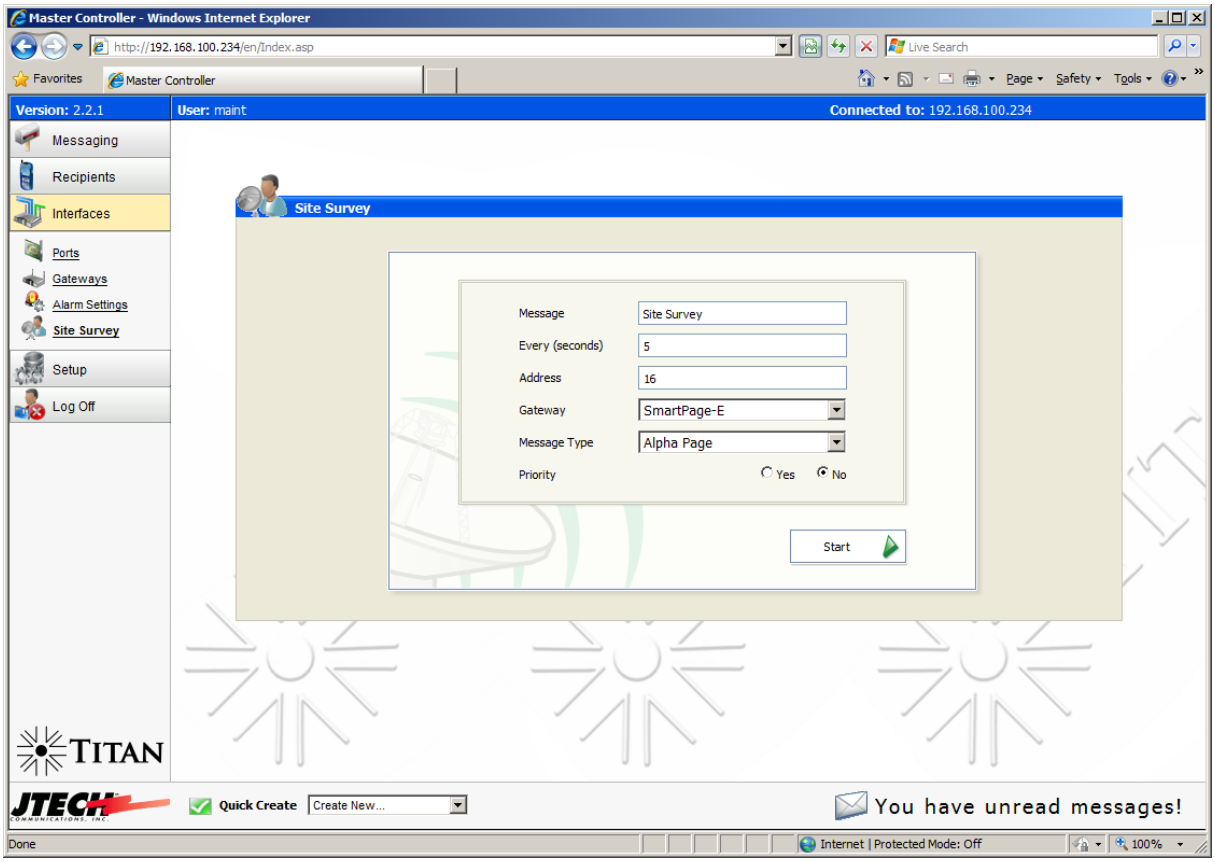
NOTE: A maximum of 100 messages per user are stored in the *Inbox*. A maximum of 200 messages are stored globally.

4.2 Site Survey

Site survey is a useful diagnostic tool used to periodically send out messages via a particular gateway.

This tool is often used to the test coverage area of a paging transmitter. This is accomplished by setting up the site survey function to send out a message to a pager every 15 seconds. You can now walk around the site with the pager and ensure that messages are received correctly in all areas.

To administer this tool, click *Interfaces -> Site Survey*.



1. In the *Message* field, enter the message that will appear on the receiving device.
2. The *Address* field is where you enter the cap code, cell phone number, email address etc for the device you wish to contact.
3. Choose the correct *Gateway* and *Message Type* using the drop down boxes and click *Start* to begin the site survey.
4. Click *Stop* to end the site survey at any time.

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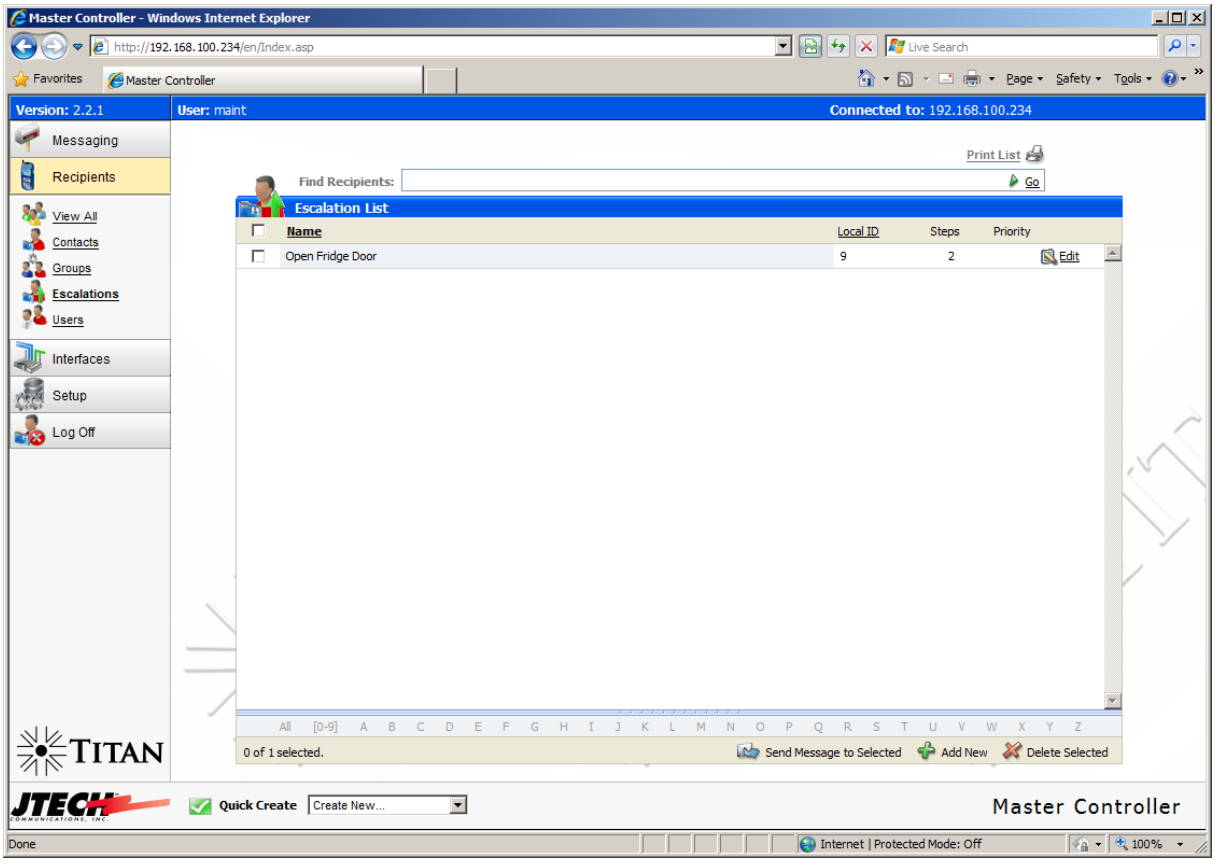
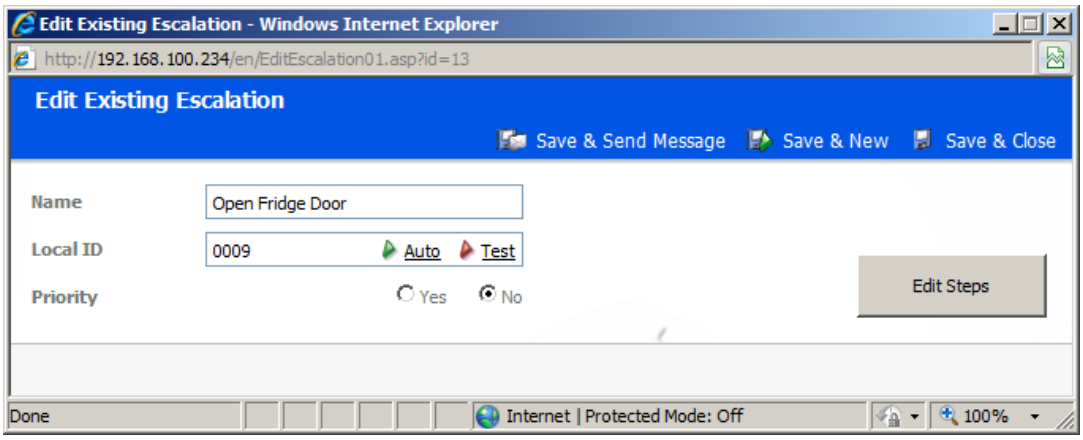
4.3 Setting up Escalations

Occasionally it is a requirement that a call unconditionally must be answered – in some cases it could mean the difference between life and death. Under these circumstances the Master Controller employs escalation management and priority queuing. The escalation management enables a sequence of staff to be contacted, at varying time intervals, until the call is answered. In addition, the priority system ensures that the call is sent immediately, by moving it to the front of the queue.

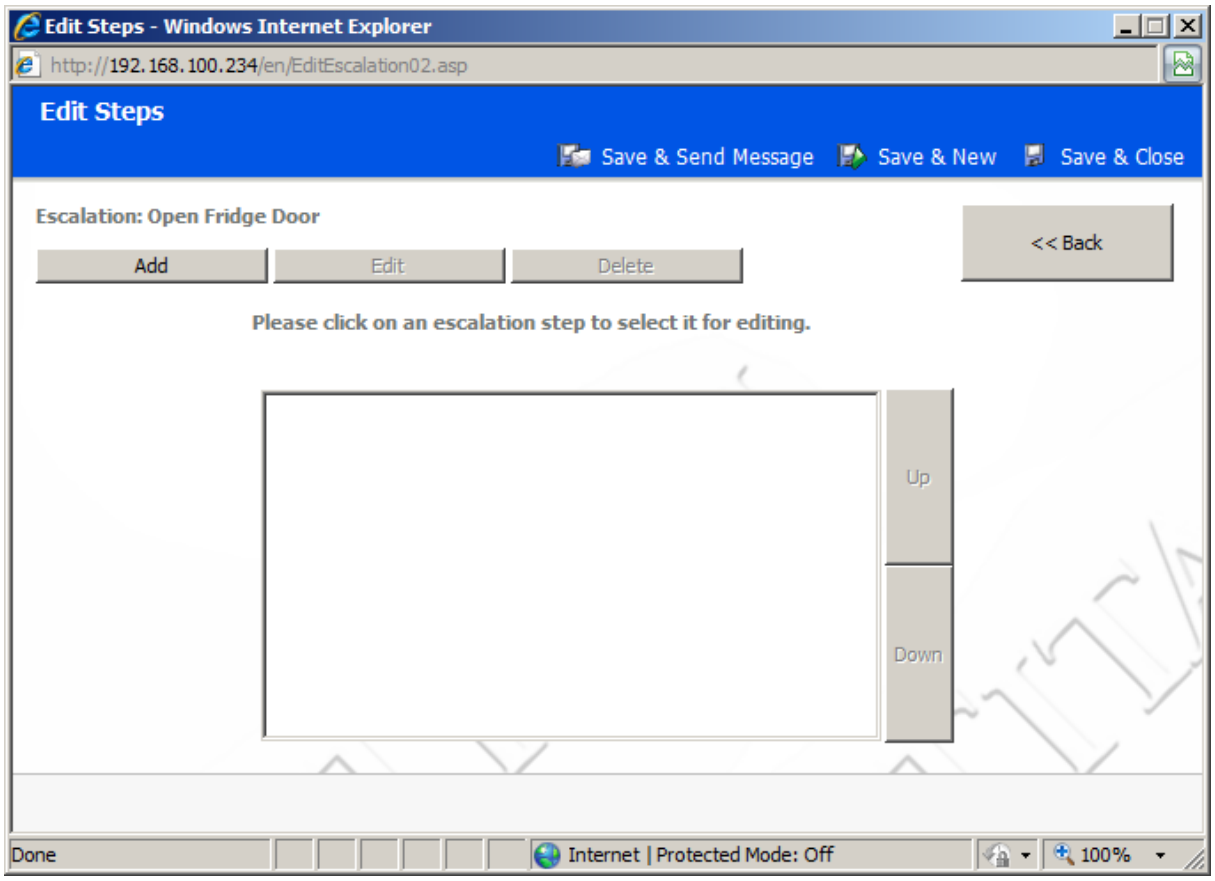
To administer escalations, click *Recipients* -> *Escalations*.



1. Click the Add New button to create a new escalation.
2. In the popup window, give the escalation a useful name, assign a Local ID and then click the *Edit Steps* button.



3. The popup window will show all recipients currently in the escalation. Click *Add* to add a new recipient.



4. You can start typing the recipient name or local id of the contact you wish to add, or simply click the *Find* link to manually add recipients. Also select the delay period before sending the message to this recipient. For example in a situation where Master Controller is monitoring a freezer door, a chef may be contacted after 1 minute of the door being left open, but if he does not respond and close the door after 3 minutes, the message could be escalated to a manager.

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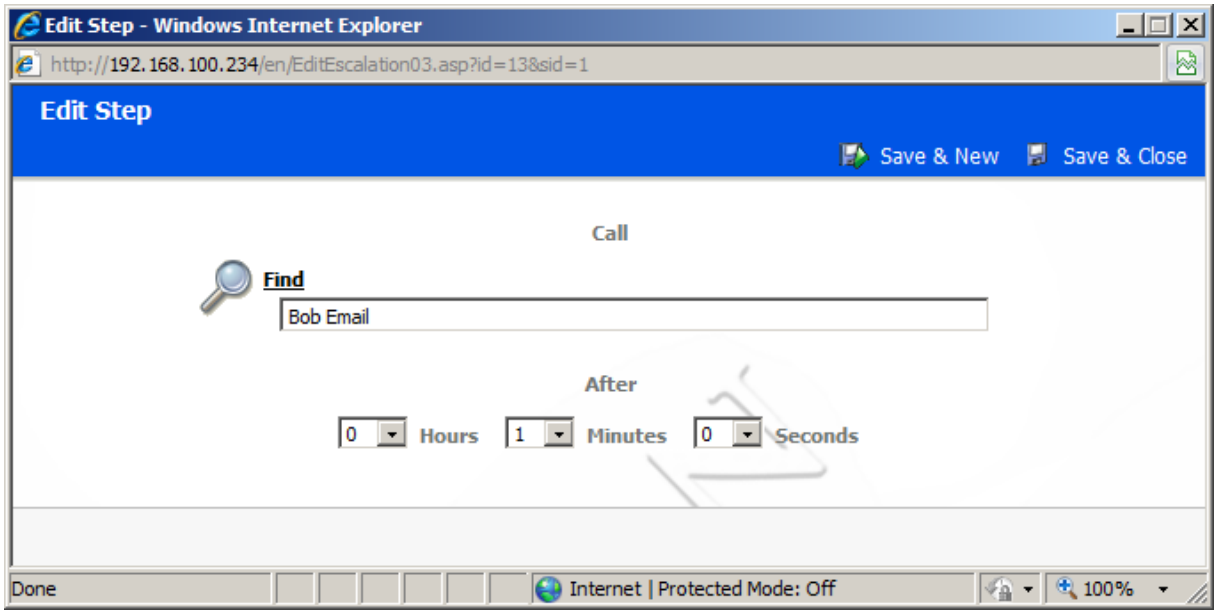
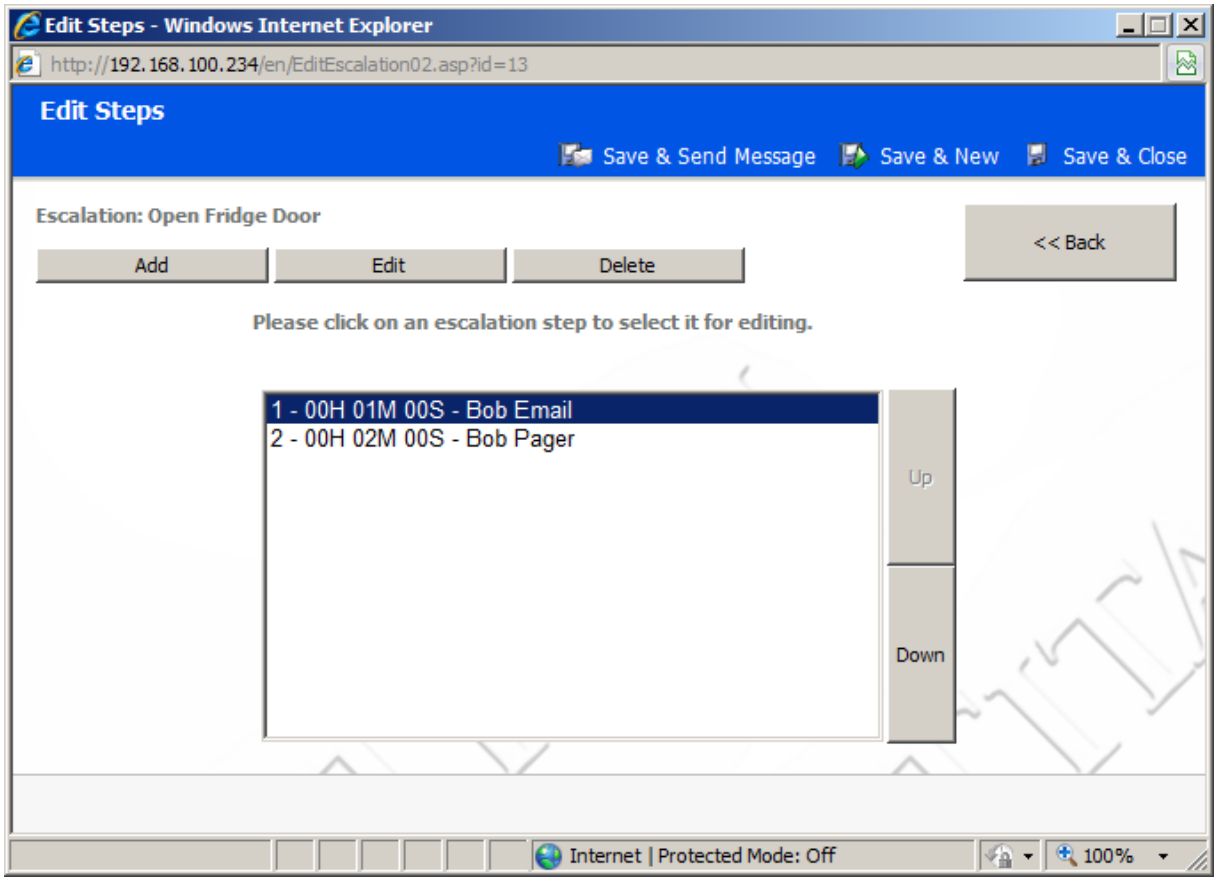


5. Click the Save & Close button to return to the *Edit Steps* screen.



6. Once you have finished adding recipients, the *Edit Steps* screen will show all members and the time delay between each.

NOTE: A maximum of 10 escalation steps are allowed.

7. Click the Save & Close button to return to the *Escalations* screen.

NOTE: An escalation can be manually canceled by going to the *Sent Items* screen, selecting the escalating message and pressing the *End Escalations* button.

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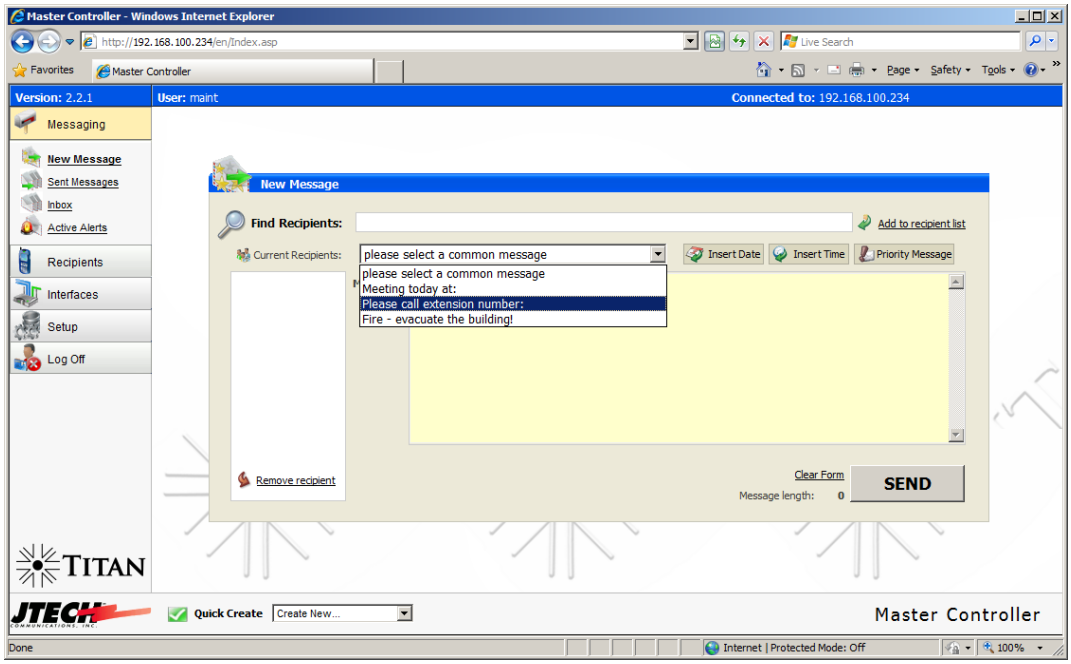
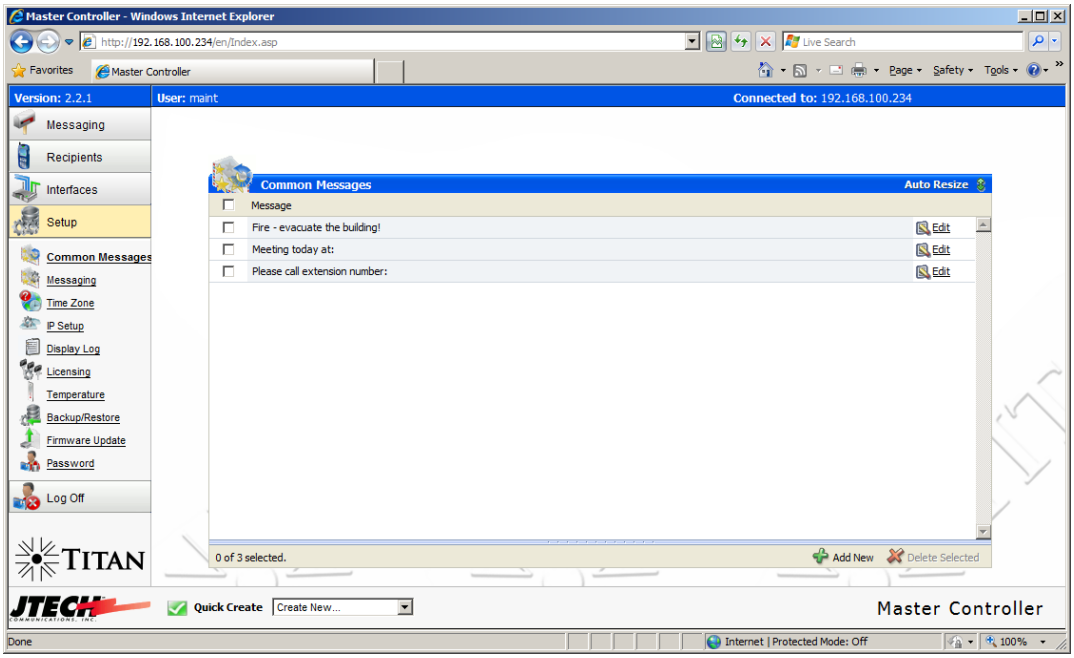
4.4 Setting up Common Messages

Common messages are an easy way to store and quickly send messages that are frequently used on the *New Message* screen.



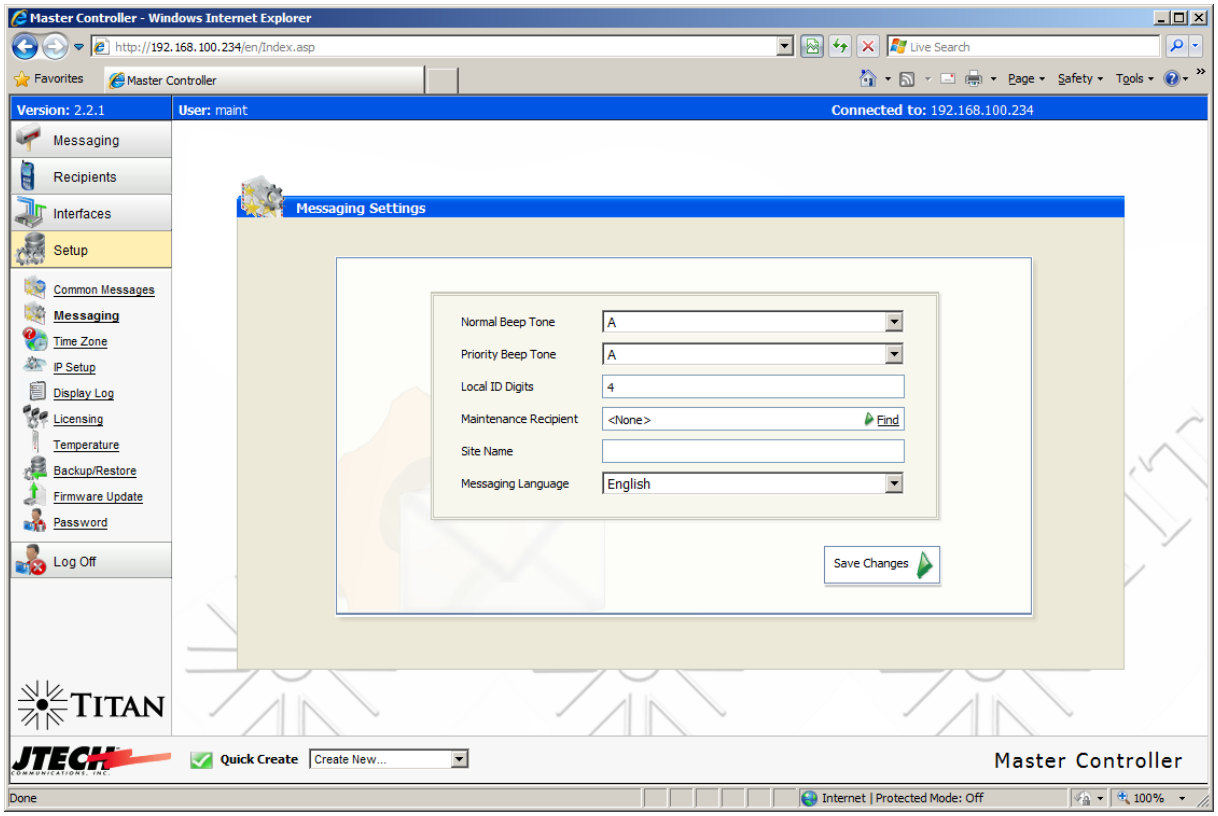
To add or edit the common messages, click *Setup -> Common Messages*.

1. Click the Add New button to add a new common message.
2. Enter the text for the common message such as "*Please call extension number:*" and then press the Save & Close button to save the changes.



4.5 Advanced Message Settings

To administer the global message settings, click *Setup* -> *Messaging*.



Normal Beep Tone – Some devices such as pagers and Kirk wireless handsets support “beep tones” (sometimes also called “sub-addresses” or “beep codes”). A typical pager supports beep codes A – D whilst a Kirk handset can support A – P. In summary these devices can provide different alerting patterns for each different beep code. The beep code selected in this field will be sent to a device when a normal message is dispatched.

Priority Beep Tone – The beep code selected in this field will be sent to a device when a priority message is being dispatched. Messages can be flagged as a priority in a number of ways. Some input protocols such as scope or email include priority information. The *New Message* screen has a *Priority Message* button that can be clicked so that manually sent messages can be sent as priority.

Local ID Digits – Every recipient in the Master Controller database must be assigned a Local ID. This ID is a unique numeric code to distinguish recipients internally. Incoming messages normally contain local ID information so that messages can be routed to the correct recipient. This field adjusts the length of the local ID from 1 -9 digits.

Maintenance Recipient – This field is to define a recipient that will receive special messages generated by the system such as gateway faults, communication errors and polling errors. The table below shows the events which cause maintenance messages to be sent.

IMPORTANT: If a message comes into the Master Controller with no defined local id, then it will be sent to the maintenance recipient selected in this field. If no maintenance recipient is defined, system messages will be sent to the recipient with local ID 0.

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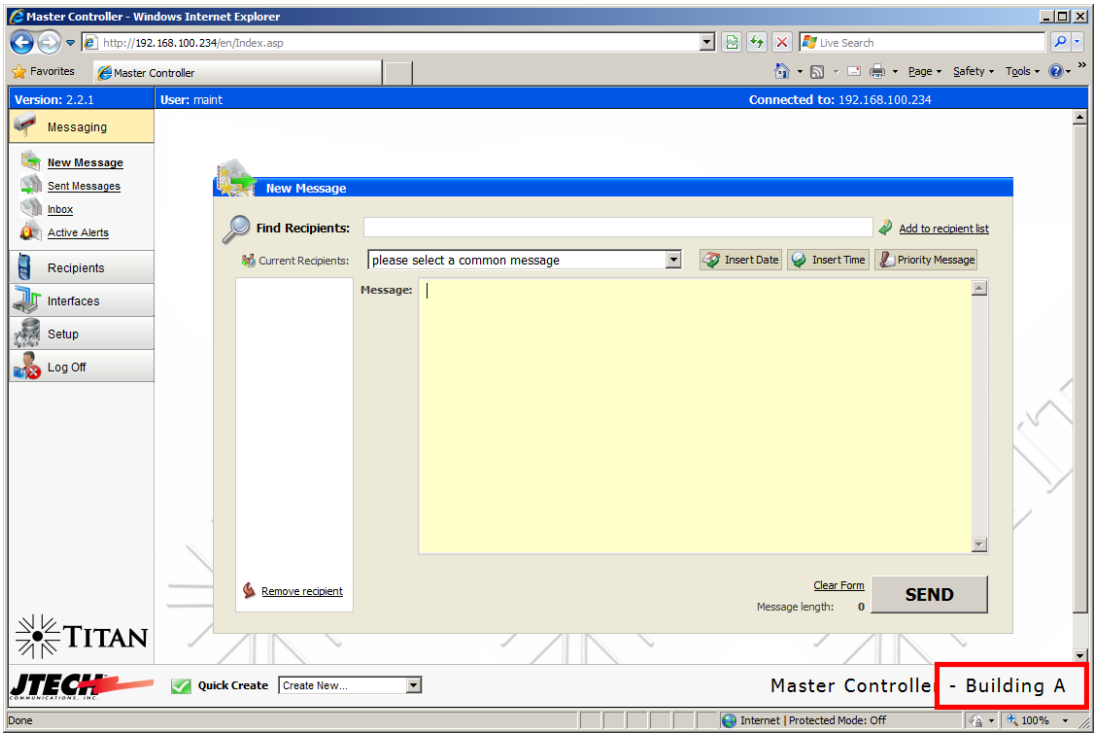
Gateway	Trigger
Alarm Router	When an Alarm Router unit stops responding to polling.
	When an Alarm Router unit starts responding to polling after not responding.
Cisco	Could not connect to Cisco Call Manager.
Comp 1	Target recipient is not defined in Comp 1 advanced settings or the target recipient was deleted.
Generic Interface	Watchdog timer has expired.
Kirk 500	Communication polling with Kirk has broken down.
	Communication polling with Kirk has been restored.
Reporting Service	Cannot connect to Reporting Server.
	Login refused by Reporting Service.
Cellular Router	SMS Message could not be sent (all retries exhausted).
	SIM card is not inserted within a Cellular Router.
	Invalid SMS with PDU.

Site Name – This field is used to add a site name to the Web GUI. This is a useful feature for users as it confirms that they are logged into the correct system. The site name is displayed on the main login screen and in the bottom right hand corner once logged in.



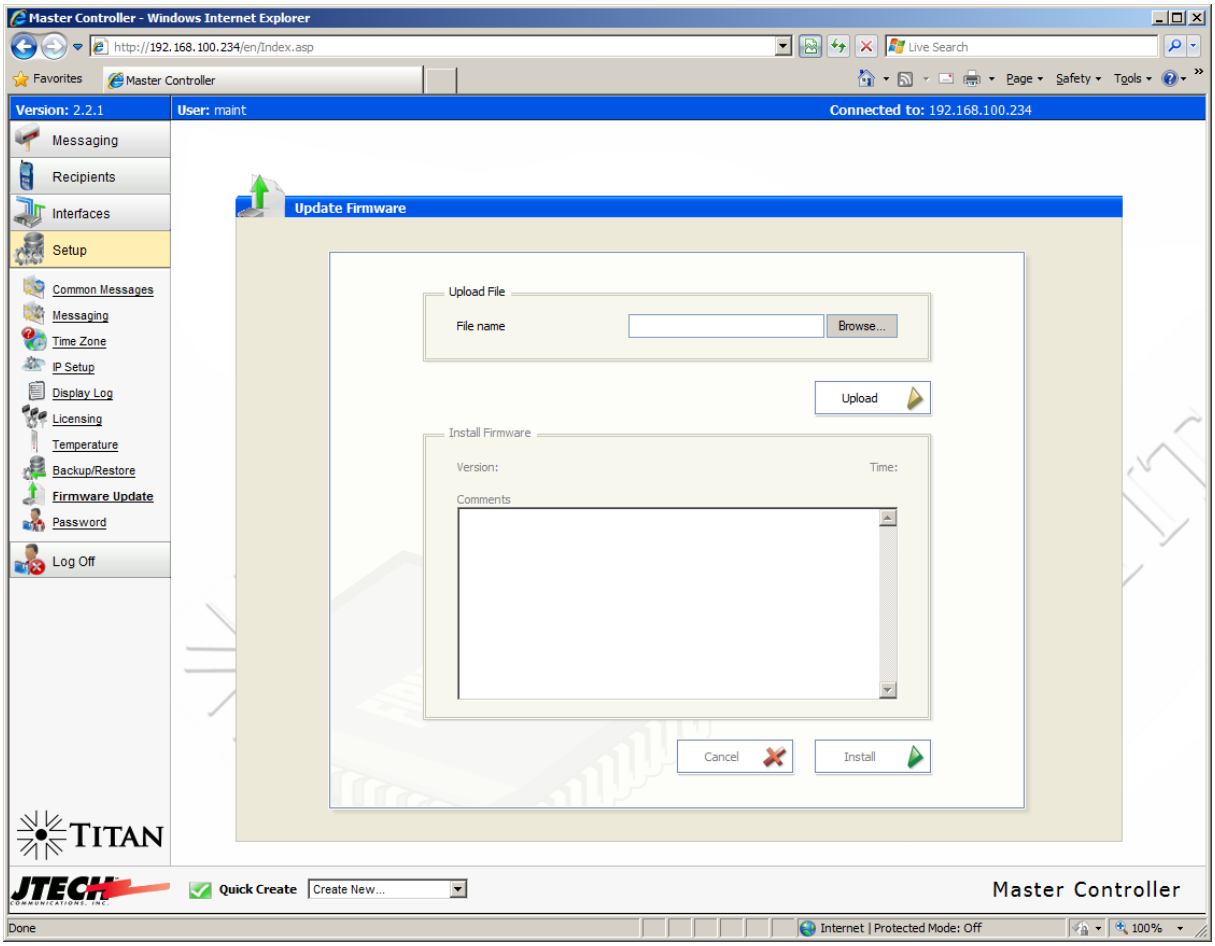
Messaging Language – Currently the Master Controller supports English and Swedish character sets.

Once you are happy with all settings click the Save Changes button.

4.6 Updating the Master Controller's Firmware

Your dealer may send you a new firmware file at some stage. This is a way to easily upgrade the unit's functionality without returning it to the factory.

To manage this process, click *Setup -> Firmware Update*.



1. The firmware file will usually be a .cfw format file. If the file has been zipped or sent via email, extract or save the .cfw file to your desktop.
2. Click the *Browse* button and browse to the location of the saved file.
3. Click *Upload*. The file will be sent over the network to the Master Controller. This may take several minutes depending on the speed of the connection between your PC and the Master Controller unit.

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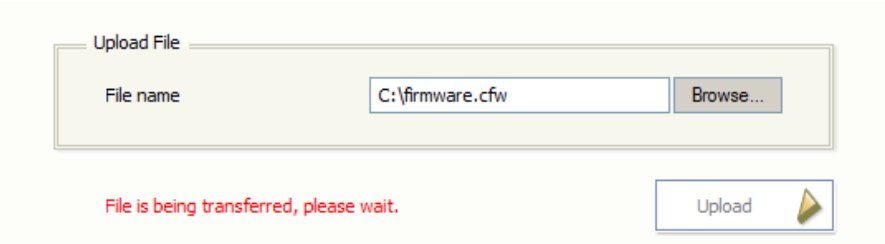
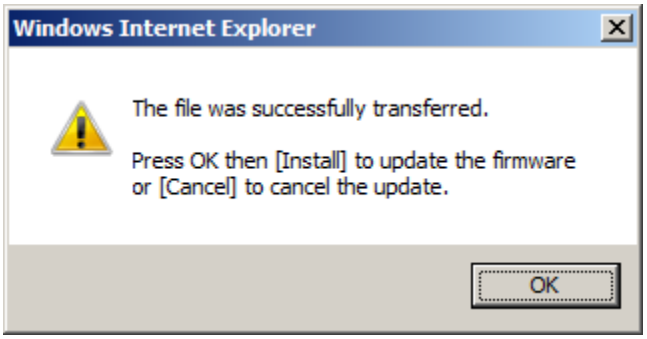


4. Once the file has finished transferring the following message will be displayed. Press OK to continue.


Windows Internet Explorer
The file was successfully transferred.
Press OK then [Install] to update the firmware or [Cancel] to cancel the update.
OK

5. Press the *Install* button to write the new firmware to the Master Controller unit.

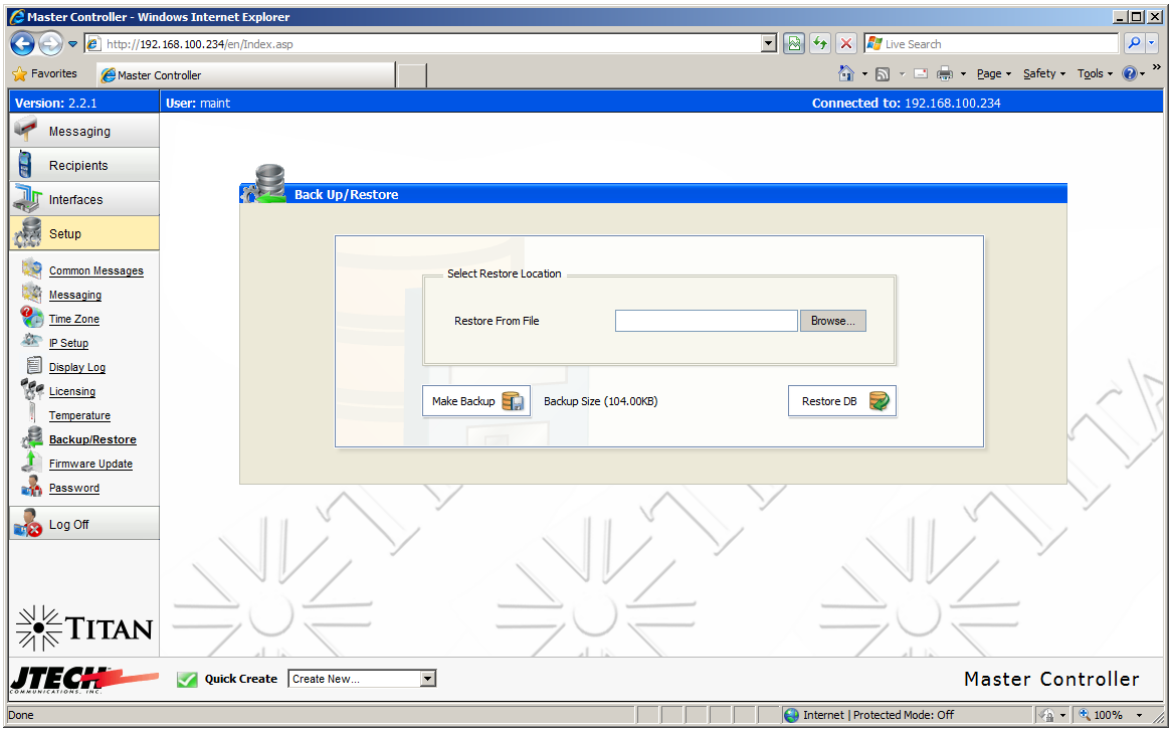
6. After the firmware has been successfully installed you must restart the Master Controller for the new firmware to be loaded.

IMPORTANT: You may also need to clear your browsers cache in order for new pages to be displayed properly in your browser.

4.7 Database Tools

All of the Master Controller settings, including recipients, port information, gateway information and network information, are stored in a database. Once a system is configured and operating correctly it is a good idea to backup a database as part of the site's data recovery plan.

To manage this process, click *Setup -> Backup/Restore*.



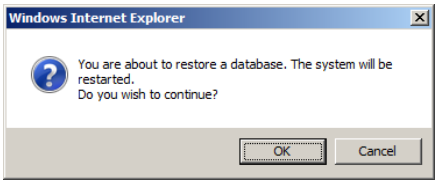
Making a backup of a database

1. Click the *Make Backup* button
2. You will be prompted for a location where to save the database file.
3. Save the file to somewhere on your PC ready for burning to a CD or other backup device.

Restoring a database

WARNING: Restoring a database clears all settings currently on the unit!

1. Click *Browse* to locate the database file you wish to install on the current Master Controller unit.
2. Click the *Restore DB* button.
3. A popup will be shown prompting to continue. Click *OK* and the system will restart.


Windows Internet Explorer
You are about to restore a database. The system will be restarted.
Do you wish to continue?
OK
Cancel

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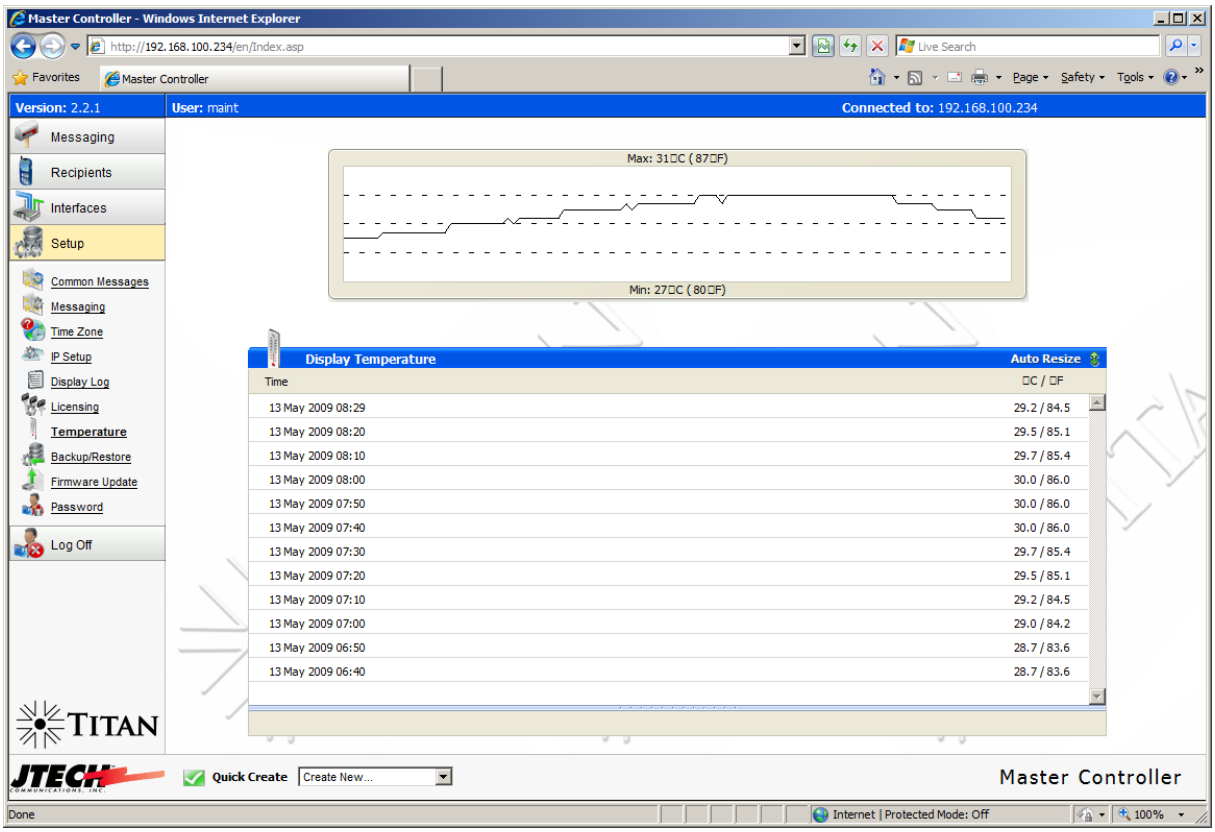
4.8 Display Unit Temperature

This screen is a useful diagnostic tool used to remotely monitor the unit temperature.

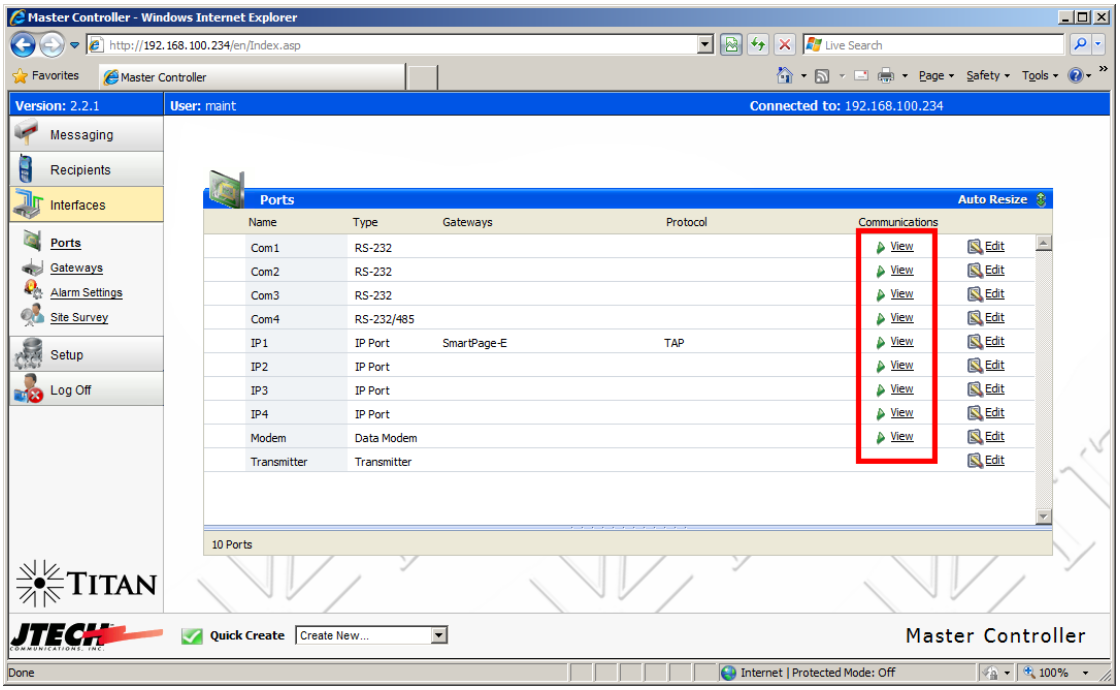
To view the current unit temperature, click *Setup -> Temperature*.



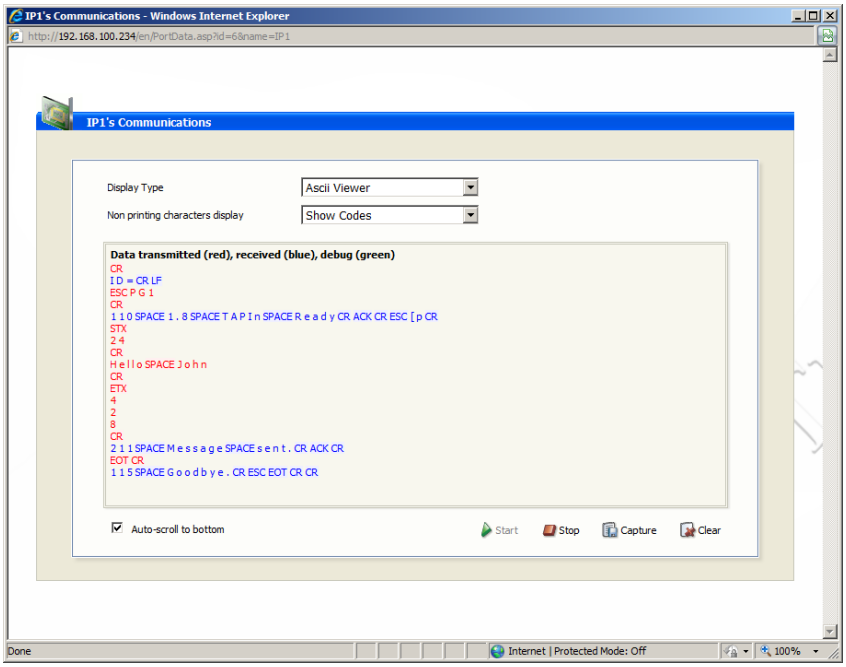
4.9 Port Communications

Port communications is a very useful tool when troubleshooting gateways, ports or recipients. It is used to show incoming and outgoing data on a particular port. This is useful because it can be used to confirm that data is flowing to or from a port.

To view *Port Communications* for a particular port, click *Interfaces -> Ports*. Now select the port that needs to be monitored and click the View button next to it.



A new window will open which will display incoming and outgoing data on the selected port.


IP1's Communications - Windows Internet Explorer
IP1's Communications
Display Type
Ascii Viewer
Non printing characters display
Show Codes
Data transmitted (red), received (blue), debug (green)
CR
I D = CR LF
ESC P G 1
CR
1 1 0 SPACE 1 . 8 SPACE T A P I n SPACE R e a d y CR ACK CR ESC [p CR
STX
2 4
CR
H e l l o SPACE J o h n
CR
ETX
4
2
8
CR
2 1 1 SPACE M e s s a g e SPACE s e n t . CR ACK CR
EOT CR
1 1 5 SPACE G o o d b y e . CR ESC EOT CR CR
Auto-scroll to bottom
Start
Stop
Capture
Clear
Done
Internet | Protected Mode: Off
100%

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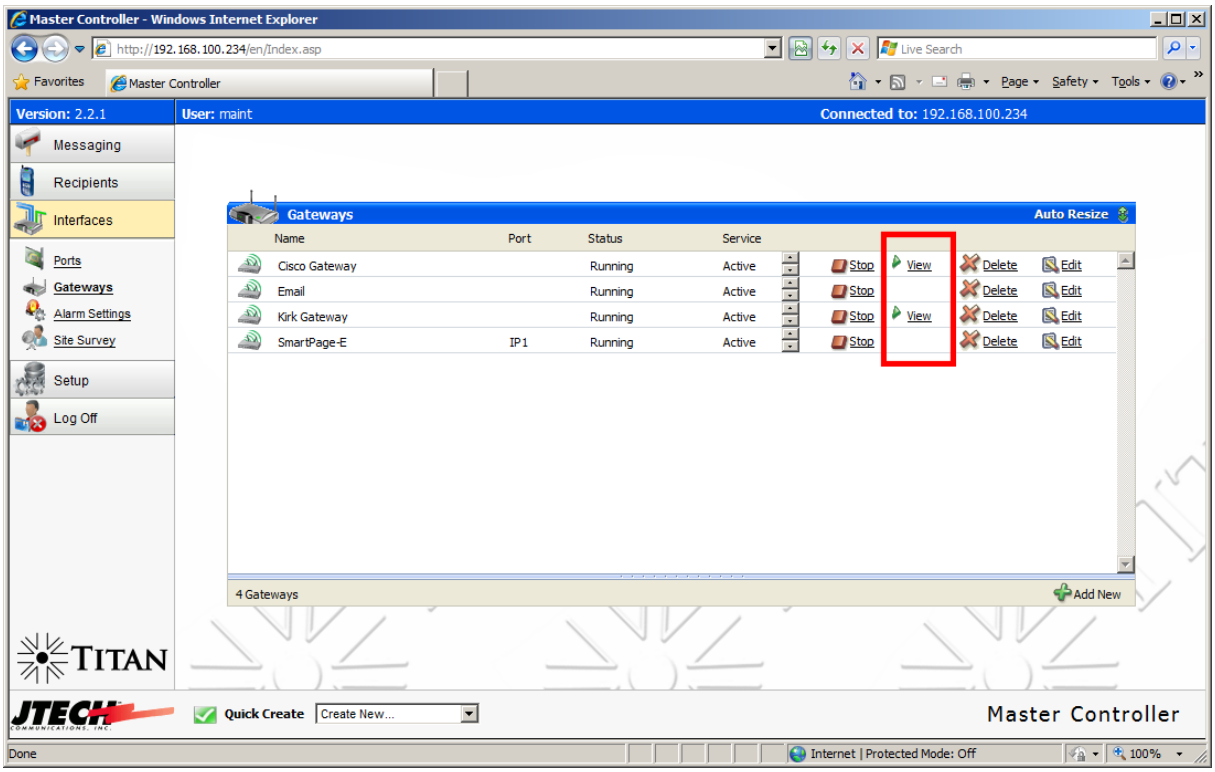
To save the data that is currently shown on the screen to a file on your computer, click the Capture button, followed by *File -> Save As*.

The display can be temporarily frozen using the Start and Stop buttons. This is useful when the trace window is showing large amounts of data and you need to pause the display to look through the data.

NOTE: When the display is frozen by clicking the "Stop" button, data is still flowing through the port – it is only the display that is frozen.

To clear the data shown in the window at any time, click the Clear button.

The ability to view communication data is also available for some gateways such as Kirk and Cisco. This is done by clicking View button next to the gateway when viewing the *Interfaces -> Gateways* screen. It will not show protocol level data like the Port communications page does, however it is still useful diagnostic tool.

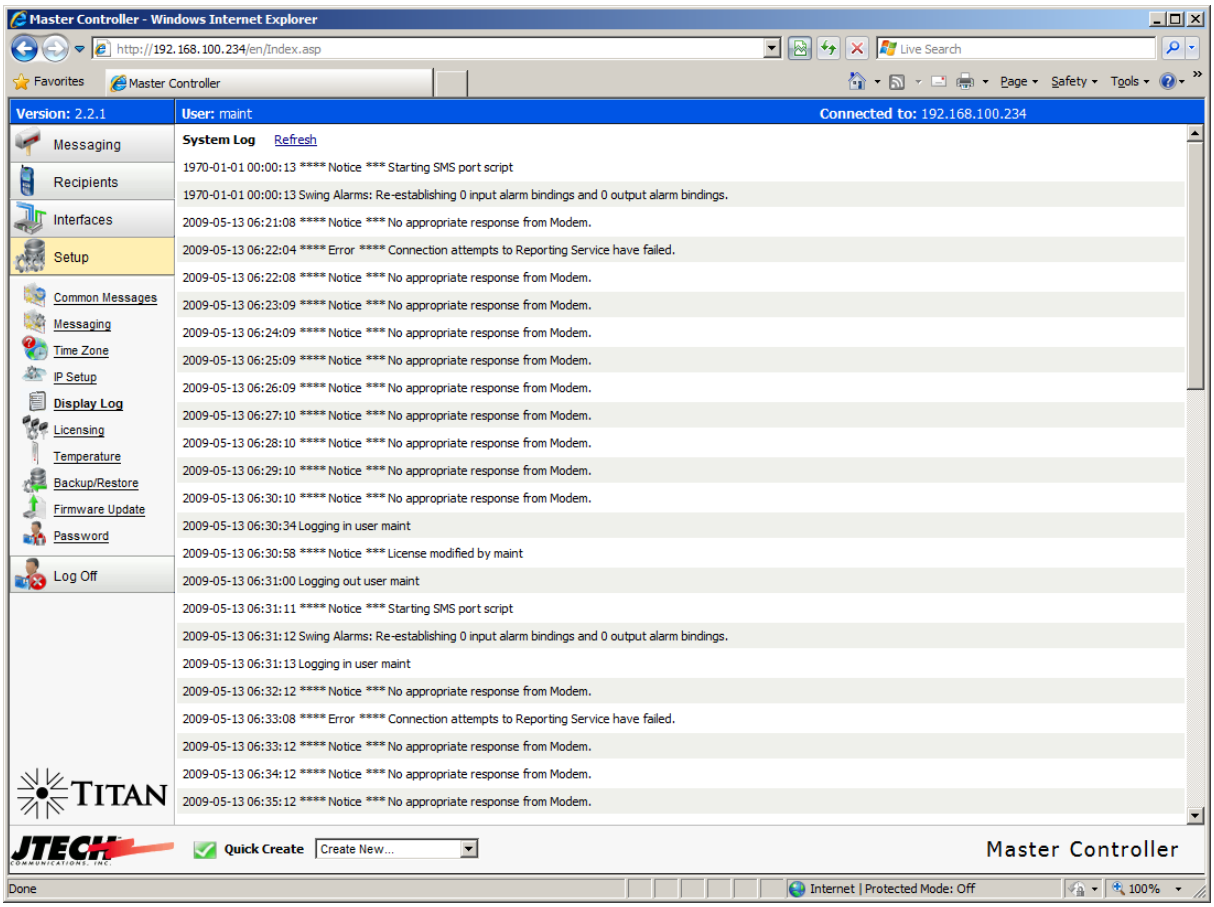


4.10 System Log

The System Log shows very detailed information about the Master Controller such as all messages processed, when users log on/off, when a gateway goes up/down or when certain settings are changed such as IP Settings.

The System Log screen shows the same information as that which is sent out to a syslog server (see the syslog section on the *Interfaces -> IP Setup* page discussed previously in this manual). However the advantage is the system log screen requires no syslog server to be configured. The disadvantage is system log is cleared whenever the Master Controller is turned off.

To view the system log, click *Setup -> Display Log*.


Master Controller - Windows Internet Explorer
http://192.168.100.234/en/Index.asp
Version: 2.2.1
User: maint
Connected to: 192.168.100.234
Messaging
Recipients
Interfaces
Setup
Common Messages
Messaging
Time Zone
IP Setup
Display Log
Licensing
Temperature
Backup/Restore
Firmware Update
Password
Log Off
System Log
Refresh
1970-01-01 00:00:13 **** Notice *** Starting SMS port script
1970-01-01 00:00:13 Swing Alarms: Re-establishing 0 input alarm bindings and 0 output alarm bindings.
2009-05-13 06:21:08 **** Notice *** No appropriate response from Modem.
2009-05-13 06:22:04 **** Error **** Connection attempts to Reporting Service have failed.
2009-05-13 06:22:08 **** Notice *** No appropriate response from Modem.
2009-05-13 06:23:09 **** Notice *** No appropriate response from Modem.
2009-05-13 06:24:09 **** Notice *** No appropriate response from Modem.
2009-05-13 06:25:09 **** Notice *** No appropriate response from Modem.
2009-05-13 06:26:09 **** Notice *** No appropriate response from Modem.
2009-05-13 06:27:10 **** Notice *** No appropriate response from Modem.
2009-05-13 06:28:10 **** Notice *** No appropriate response from Modem.
2009-05-13 06:29:10 **** Notice *** No appropriate response from Modem.
2009-05-13 06:30:10 **** Notice *** No appropriate response from Modem.
2009-05-13 06:30:34 Logging in user maint
2009-05-13 06:30:58 **** Notice *** License modified by maint
2009-05-13 06:31:00 Logging out user maint
2009-05-13 06:31:11 **** Notice *** Starting SMS port script
2009-05-13 06:31:12 Swing Alarms: Re-establishing 0 input alarm bindings and 0 output alarm bindings.
2009-05-13 06:31:13 Logging in user maint
2009-05-13 06:32:12 **** Notice *** No appropriate response from Modem.
2009-05-13 06:33:08 **** Error **** Connection attempts to Reporting Service have failed.
2009-05-13 06:33:12 **** Notice *** No appropriate response from Modem.
2009-05-13 06:34:12 **** Notice *** No appropriate response from Modem.
2009-05-13 06:35:12 **** Notice *** No appropriate response from Modem.
TITAN
JTECH
Quick Create
Create New...
Master Controller
Done
Internet | Protected Mode: Off
100%

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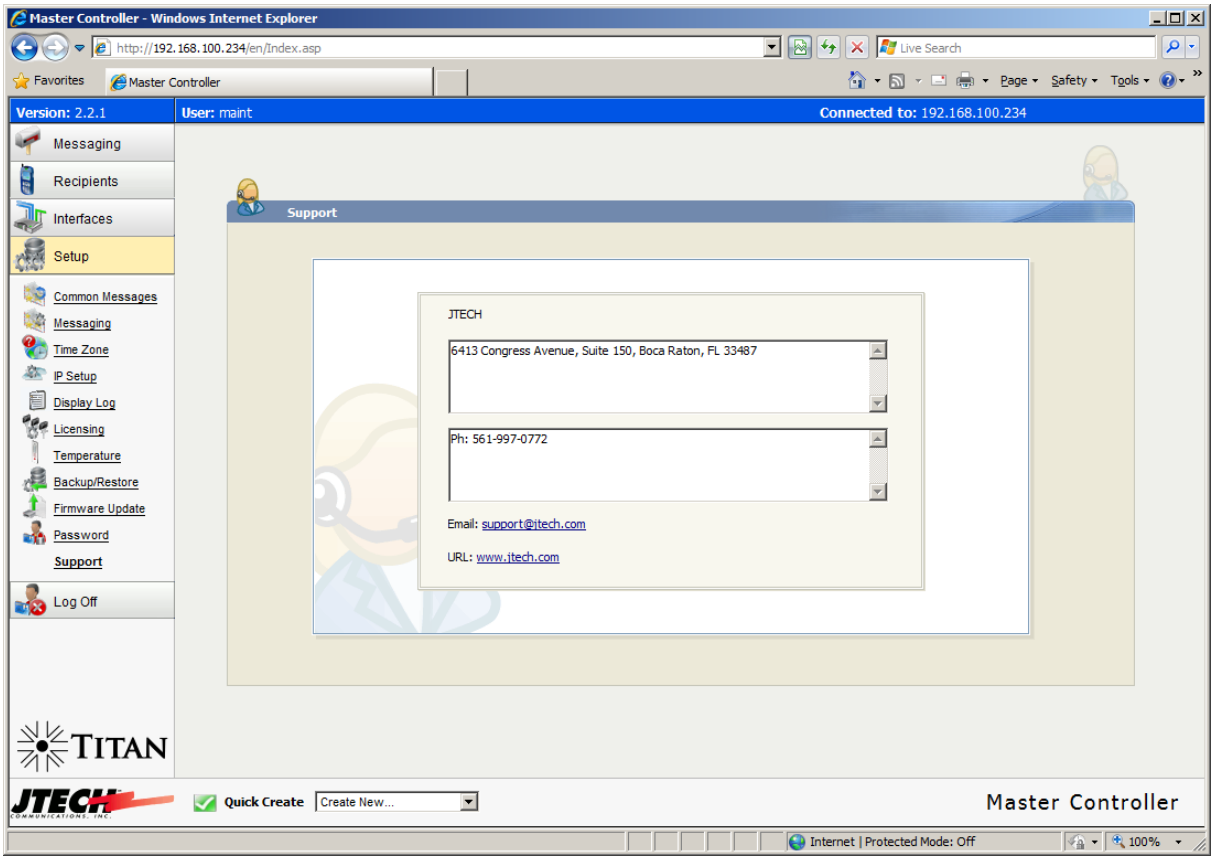
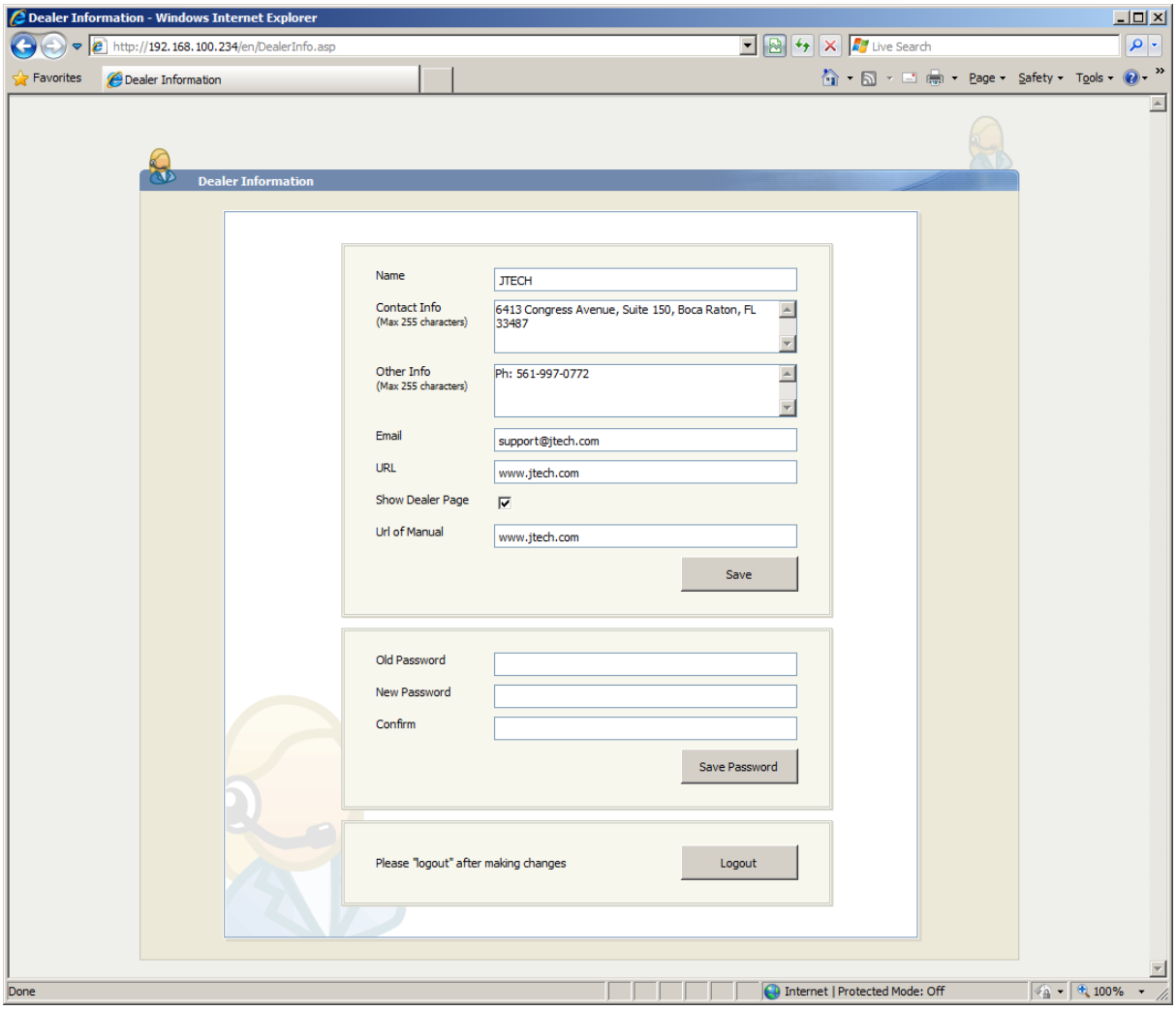
4.11 Support Contact Information

If you are a dealer, you may enter your own company contact details into the Master Controller so that end users can contact you directly if they have an issue or question.



To enable this menu item and edit the details, login to the Master Controller unit with login:dealer pass:dealerdata. The screen shown below will then be shown. Simply enter all of you contact details, tick the *Show Dealer Page* tick box and click *Save*.

To prevent unauthorized access to these details, you can change the password. When finished click the *Logout* button.



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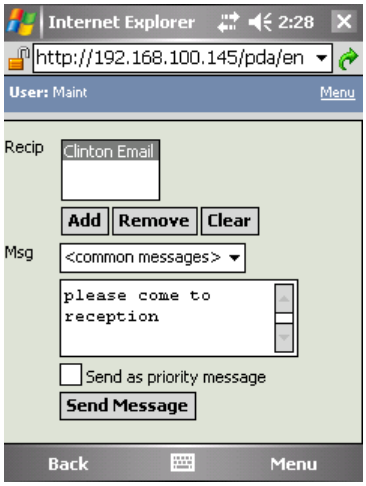
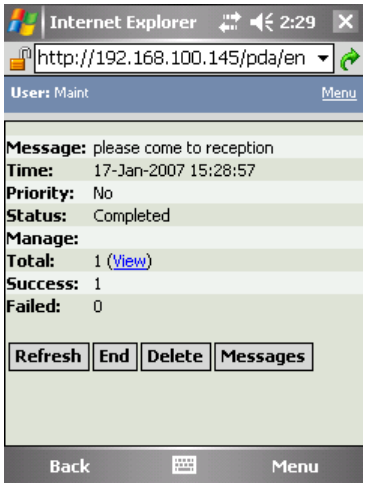
4.12 PDA, Cell /Mobile Phone Client

The Master Controller web interface can detect if a compact browser is connecting to such as those used on mobile phones and PDA's. In this case the Master Controller will display a cut down version of its web interface. After you have logged in with your normal login and password, you will have the following six options:

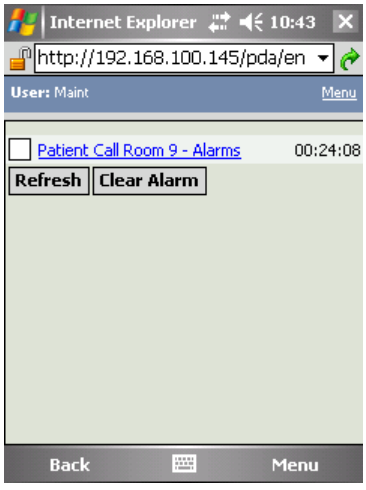


- **Send Message** – *Send a message to a contact or group*
- **Inbox (0/0)** – *View messages that have been sent to you*
- **Sent Items** – *View sent messages and their status*
- **Active Alarms (0/0)** – *Active alarms can be viewed or cleared*
- **User Password** – *Change your password*
- **Logout** – *Exit the system or login as a different user*



The PDA/Mobile phone client does not use frames so that browsers from mobile phones and PDA's that do not use frames are able to view the pages properly. Currently the three supported user agents are:

- Windows CE
- Symbian OS
- Apple iPhone

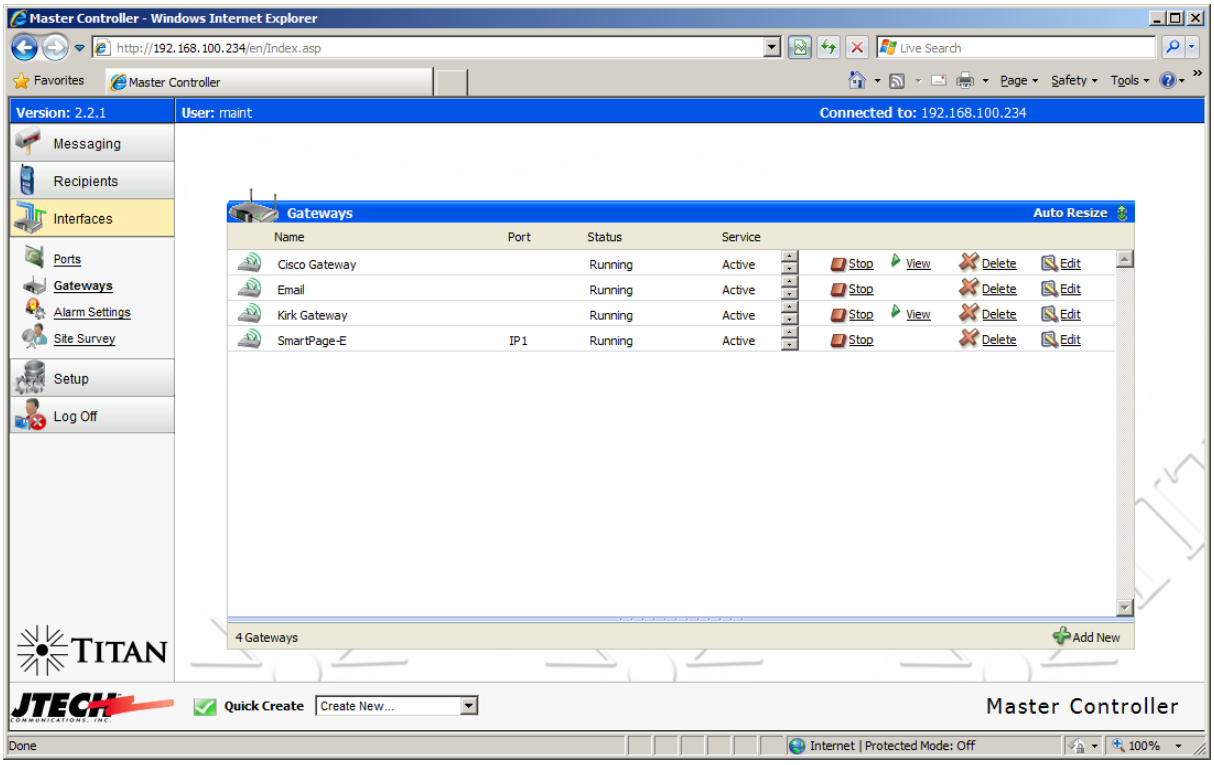


5 GATEWAY CONFIGURATION EXAMPLES

The following section has some example system configurations which you may find useful information when setting up your own system.

NOTE: Because of the nature of setting up gateways, you should configure any "output" gateways first, followed by any "input" or 2-way (input + output) gateways.

To administer gateways, click *Interfaces -> Gateways*.



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5.1 SMTP (email)

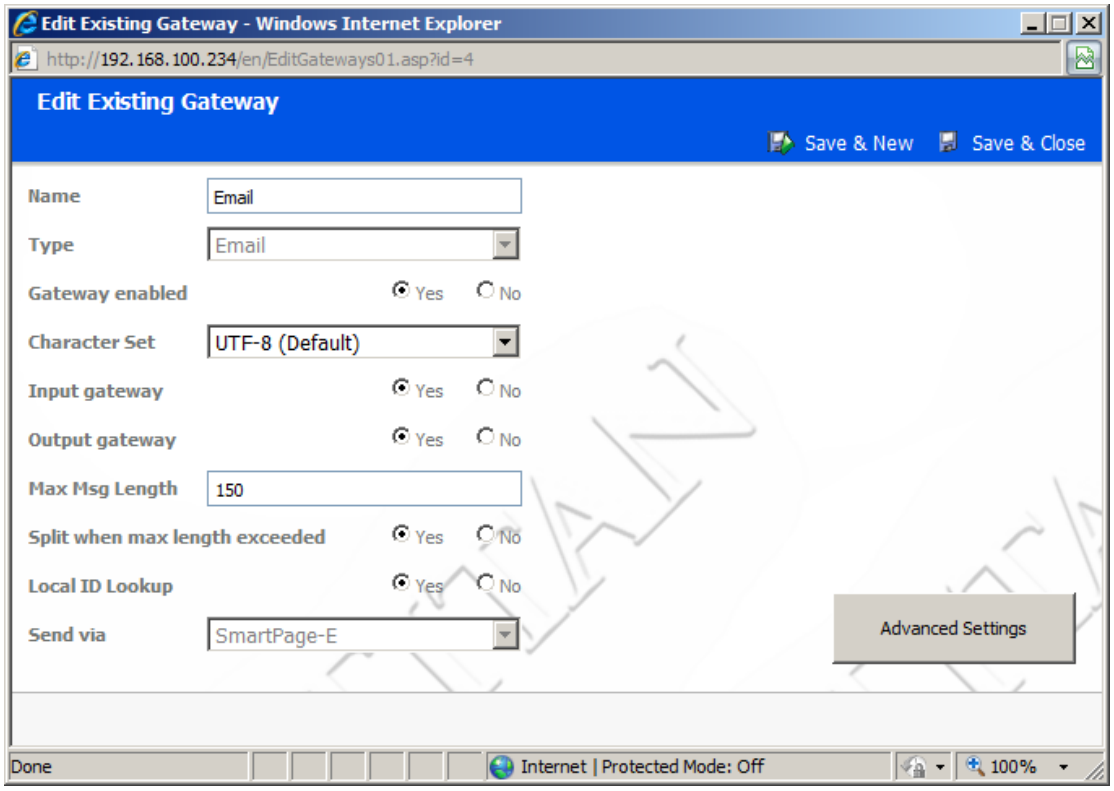
In this example, we will setup a system which will can send and receive email messages and route appropriately.

5.1.1 Master Controller Settings

1. The Master Controller unit will need to have an "Email" license key installed. Contact your place of purchase for this type of license key.
2. A *Port* for the email in gateway does not need to be configured.

NOTE: Internet based messaging protocols like WCTP, SNPP, Cisco, Kirk 600/6000, SMTP (email), are implemented directly upon TCP/IP sockets, and thus do require a port to be configured.

3. An email gateway will need to be created. To add a new gateway, click the Add New button.
4. Give the gateway a useful name and select *Email* in the *Type* drop down box.



5. The *Character Set* field determines the character set used when sending Email messages. For more details on language support and code page settings contact your dealer or JTECH. If in doubt please use the default character set (UTF-8).
6. Choose *Yes* for the *Input Gateway* and *Output Gateway* options. If you are only sending or receiving emails, select the appropriate option.

7. The *Max Length*, *Split* and *Max Count* options are very useful options to control outgoing email message length.

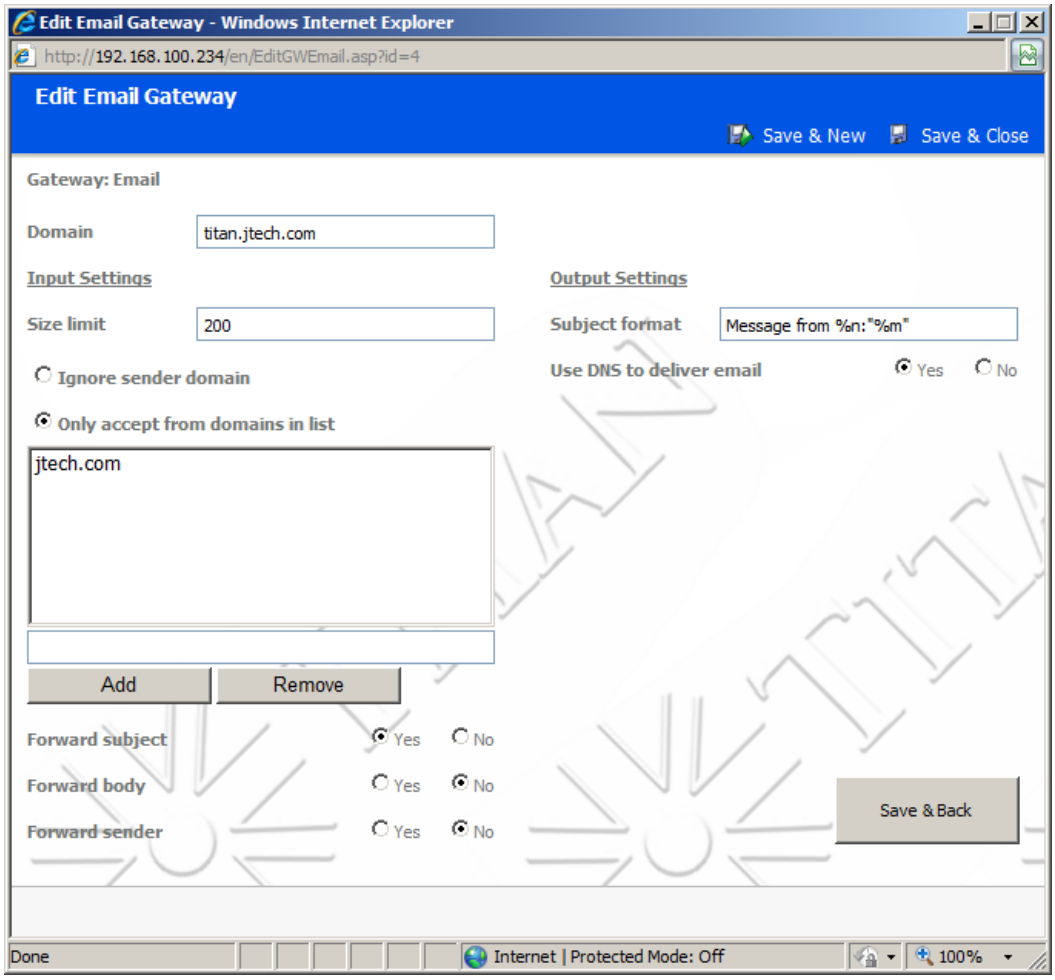
   Max Length – This setting refers to the maximum number of characters that an outgoing email message will be limited to. Use 0 for unlimited.

   Split – If an outgoing email is greater than the *Max Length* setting, you can select *Yes* to split the message up into multiple messages. Select *No* to send out only one message no matter what the message length.

   Max Count – If you selected *Yes* to the *Split* option, you can enter the maximum number of separate messages that will be dispatched. Use 0 for unlimited.

8. If the gateway is setup as an input gateway, you will see two extra fields named *Local ID Lookup* and *Send Via*. These settings determine the how a valid incoming message is routed out of the Master Controller. In the *Send Via* drop down box, select the gateway you wish the incoming email to be sent out of. Set *Local ID Lookup* to *Yes* if the incoming email should be scanned for a local ID so that the message can be delivered to the appropriate person. If this is set to *No*, Master Controller will assume that the incoming message contains the actual address of the recipient such as an email address, pager cap code, cell phone number etc.

9. When setting up this gateway, advanced details will need to be configured. Click the *Advanced Settings* button to administer these options.



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10. The *Domain* field refers to the domain that the email gateway will be working with. In the example above, if Master Controller dispatches an email to some recipient the email will appear from <message id>@TITAN.jtech.com. Emails sent to the Master Controller will need to be in the format <local id or recipient name>@ TITAN.jtech.com.

5.1.2 Master Controller Input Settings

The *Input Settings* section will be visible if *Input Gateway* field was set to *Yes* on the previous screen.

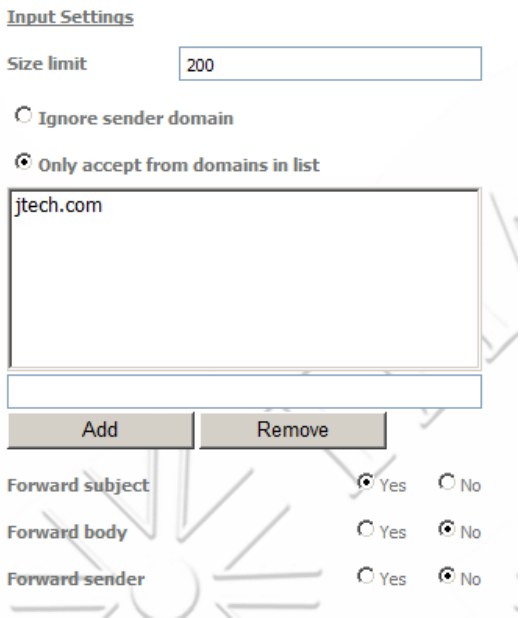
Size limit – This field can be used to limit the size of incoming emails. Emails containing more characters than the number in this field will be rejected. Default 200 characters.

Ignore sender domain / Only accept from domains in list – For security purposes, Master Controller can be set to only accept emails from a known domain. In the example below, Master Controller would only accept incoming emails sent from "<anyone>@jtech.com".

Forward subject – Incoming emails may be sent to the Master Controller with text in the subject line. Select *Yes* here to accept this text and use it as part of the message.

Forward body – Incoming emails may be sent to the Master Controller with text in the body. Select *Yes* here to accept this text and use it as part of the message.

Forward sender – Incoming emails contain information about the sender. Select *Yes* here to accept this information and use it as part of the message.



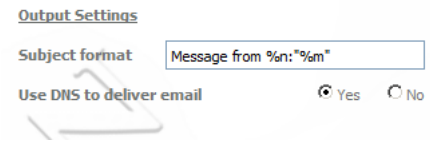
5.1.3 Master Controller Output Settings

The *Output Settings* section will be visible if *Output Gateway* field was set to *Yes* on the previous screen.

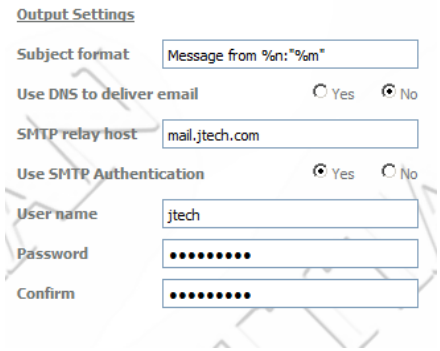
Subject format – When the Master Controller module sends an email message to a recipient, the actual message will appear in the body of the email. However this field is used to customize the subject line of the email as follows. Standard text can be entered that will appear in the subject for every outgoing message. Alternatively strings can be entered providing unique information for each email.

- %a - the message's target address.
- %m - the message text is inserted.
- %n - product name.
- %t - the type (0 for tone only, 1 numeric, 2 alpha, 3 email etc) is inserted as a digit.
- %p - the priority (0 for normal, 1 for priority).
- %b - the beep code (A through J) is inserted as a character.
- %s - the sequence number of the message from this gateway.
- %u - the user name that generated the message, otherwise "System".

Use DNS to deliver email – If *Yes* is selected, email will be sent directly to the destination mail server, without the need of a relaying mail server. This is generally used when sending Email messages via a local Microsoft Exchange server.



If *No* is selected, email will be sent to a relaying mail server. This is generally used when sending Email messages via an external mail server such as your ISP. You will need to configure the mail server name or IP address and a login/password.



Click the Save & Close button to save all changes

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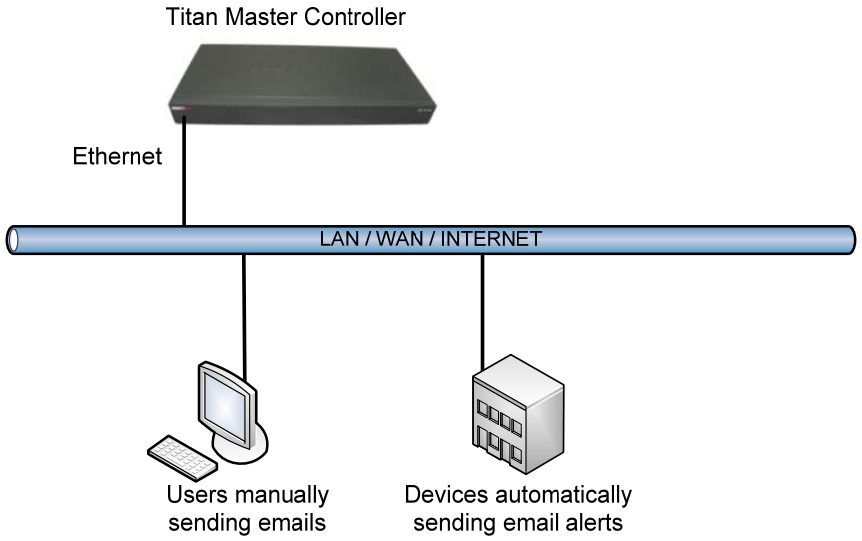
5.1.4 Configuring an incoming Email System using Outlook Express

Any device or PC capable of sending emails can be used to send Master Controller an email message. Once you have configured incoming email on the Master Controller you can test by following the directions below.

Outlook is used as the e-mail program in this example. Other e-mail programs that support POP3 may be used.



1. Open up Outlook Express (*Start -> Programs -> Outlook Express*)
2. Select *Tools -> Accounts -> Add -> Mail*
3. Enter a *Display Name* for this connection.
4. In the *Email Address* field any address can be entered. This address will appear as the "Sender" to the Master Controller module.
5. For the *Incoming* and *Outgoing* mail servers, enter the IP Address of the Master Controller unit. The Master Controller should be setup on a fixed IP Address.
6. In the *Account name* field type any name and leave the *Password* field blank.
7. Click *Finish.*
8. Click the *Create Mail* button to create a new email message.
9. The *To* field is used by Master Controller to determine where a message should be sent. The format of the address will depend on the *Local ID Lookup* field.

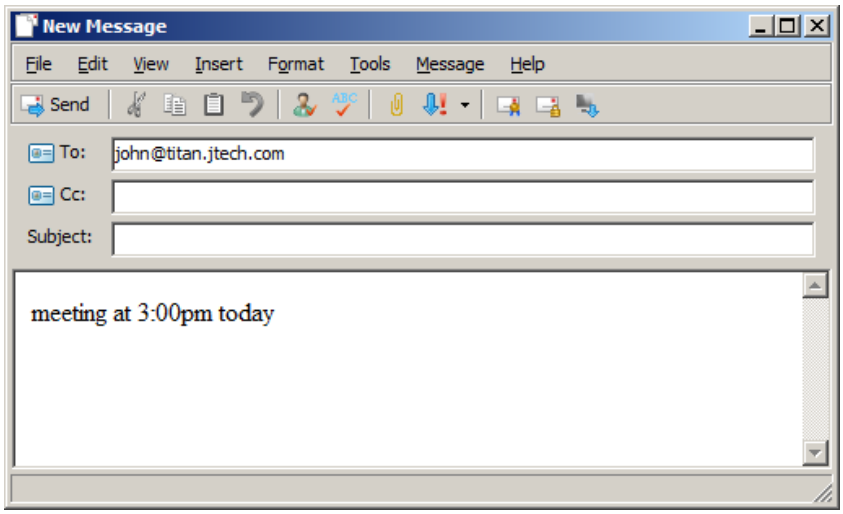
Local ID Lookup = Yes

If this field is set to *Yes,* emails sent to the Master Controller must be in this format.

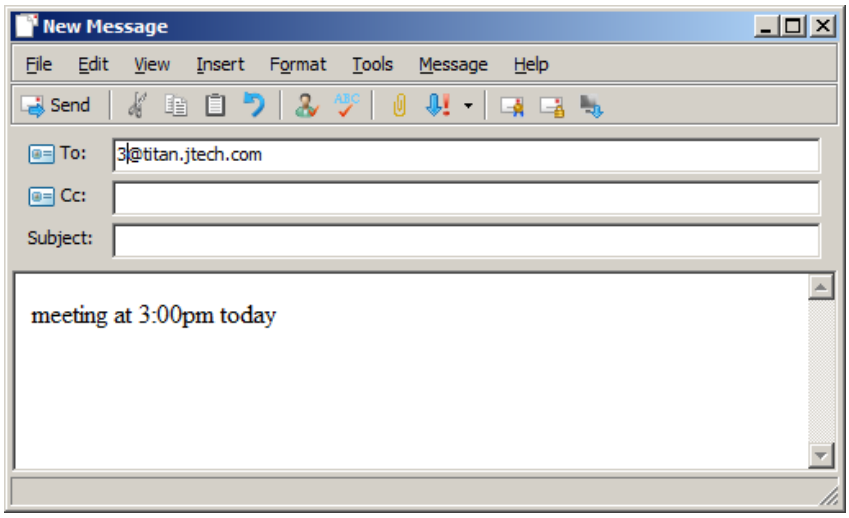
localid@domain or *recipientname@domain*

IMPORTANT: The domain must match that of the *Domain* field on the Email Gateway settings screen.

For example, if a message was sent to Master Controller as follows, the unit would look in its database for a recipient named john and send the message to that person.



Another example, if a message was sent to Master Controller as follows, the unit would look in its database for a Local ID of "3" and send the message to that person.



Local ID Lookup = No

If this field is set to *No,* emails sent to the Master Controller must be in this format.

address@domain

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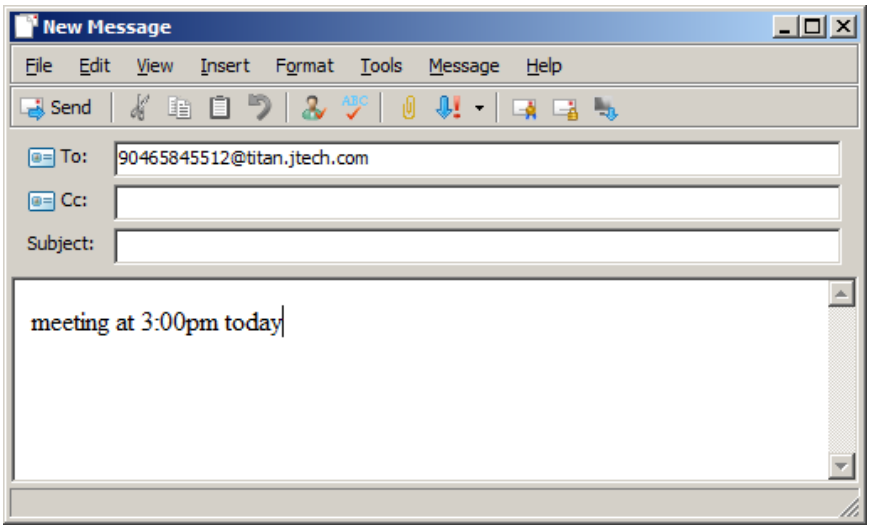
IMPORTANT: The domain must match that of the *Domain* field on the Email Gateway settings screen.

In this case the *Send Via* field becomes available. An outgoing gateway will need to be chosen which determines which gateway the message will be sent via.

Therefore the *address* field will depend on the gateway chosen in the *Send Via* field.

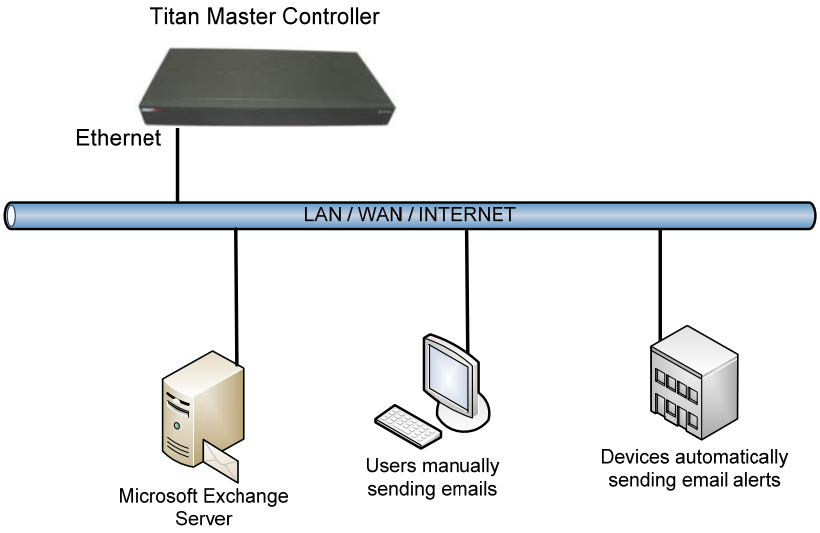
- For an SMS *gateway*, the address will be a cell phone number.
- For an Email *gateway*, the address will be an email address.
- For a POCSAG *gateway*, the address will be a pager cap code.
- Or the *address* may be a Local ID which will be looked up by another system such as an SmartPage-E unit.

For example, if a message was sent to Master Controller with the *Send Via* option set to an SMS gateway, the unit will send the message to the cell phone number 90402567426.



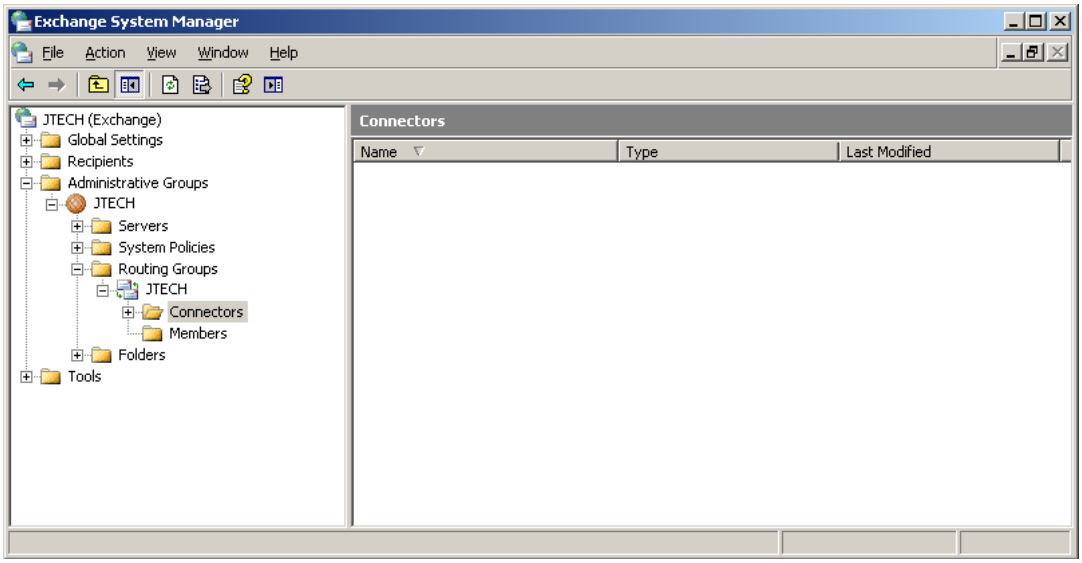
5.1.5 Configuring an incoming Email System using Microsoft Exchange Server

Connecting a Master Controller to a Microsoft Exchange Server is also possible which allows for some more flexibility with Email messaging. The following section outlines how to setup an example system.



1. Login into the Exchange Server machine and run the *System Manager* program from the *Start Menu*.
    a. If you are using Microsoft Exchange 2003 Click *Administrative Groups -> Routing Groups -> Connectors.*
    b. If you are using Microsoft Exchange 2000, click *Routing Groups -> First Routing Group -> Connectors.*

NOTE: In the example below, we will be using Microsoft Exchange 2003.



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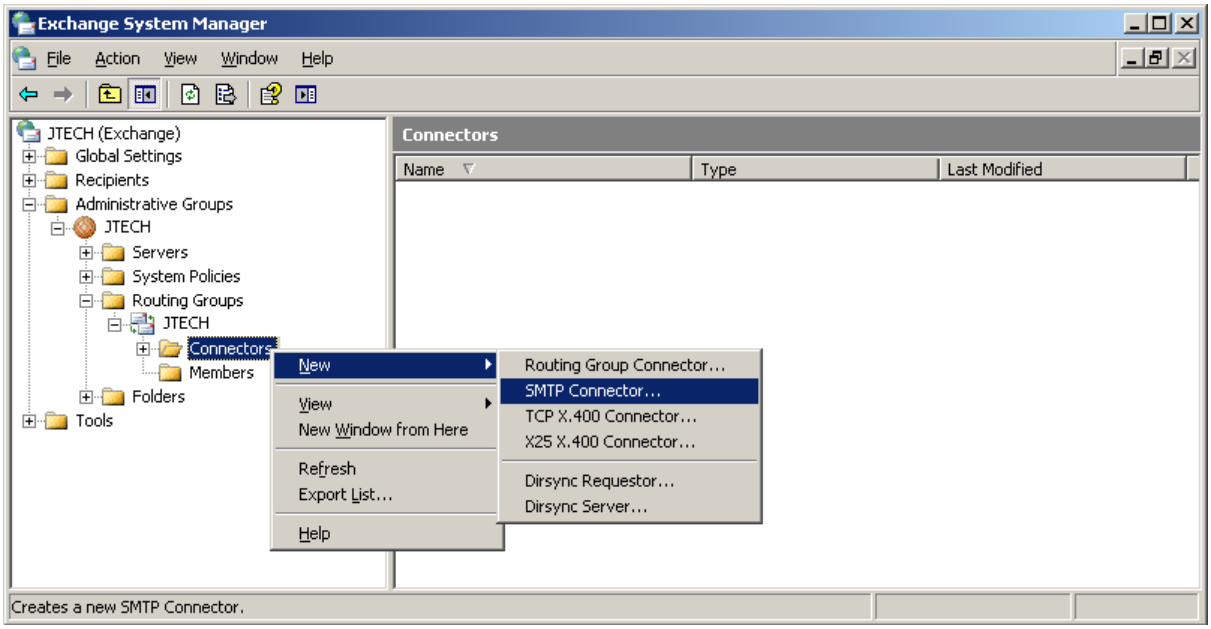
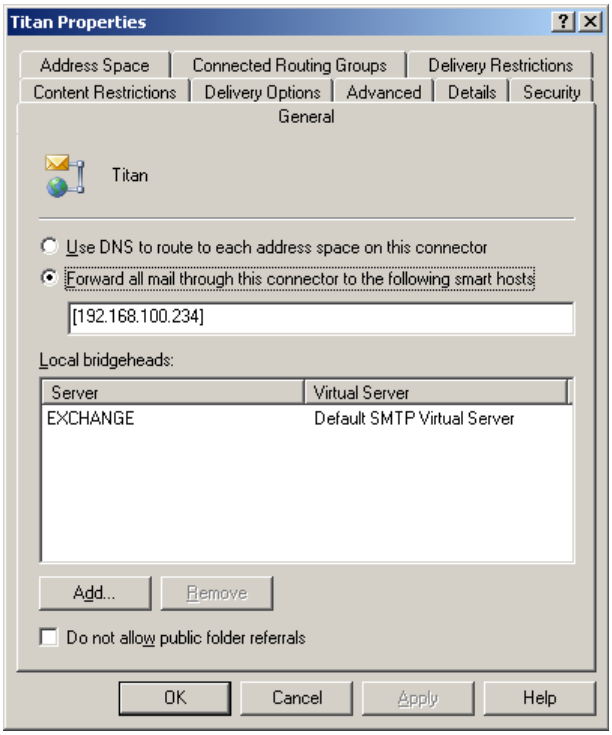
2. Right click on the *Connectors* folder and select *New -> SMTP Connector*.

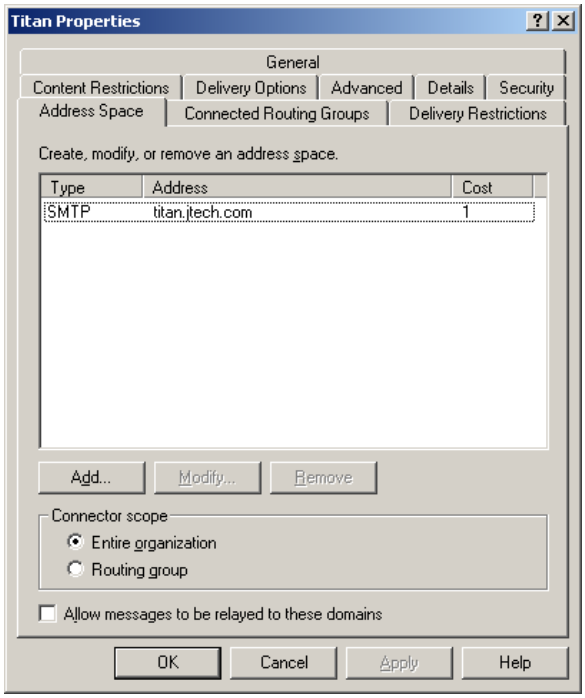


3. On the *General* tab, select *Forward all mail through this connector to the following smart hosts* field and then type the IP address of the Master Controller unit in square brackets as shown below.

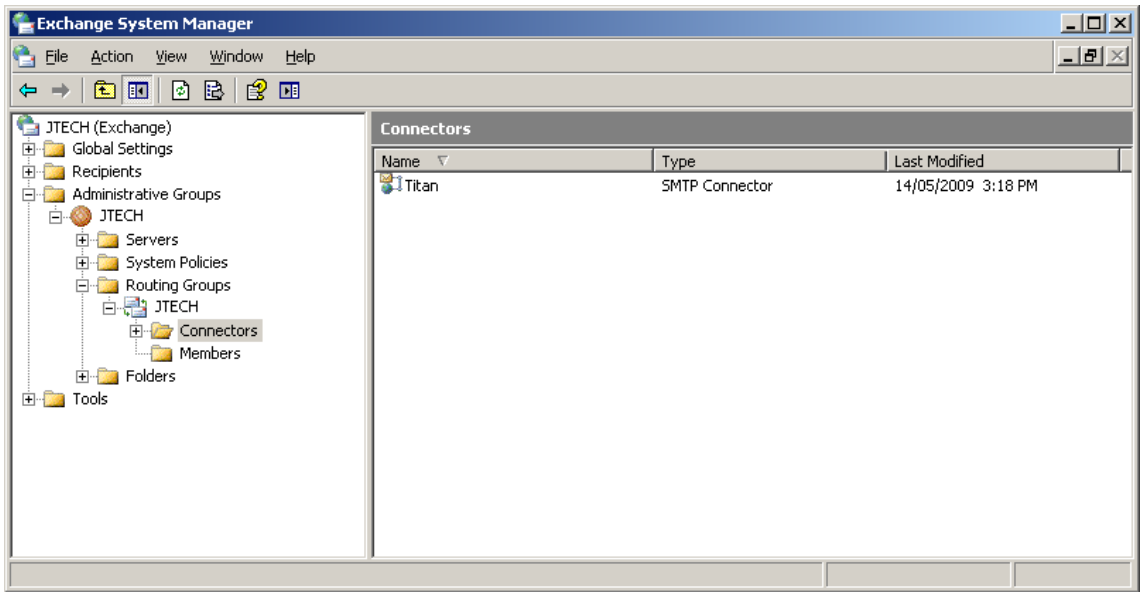
4. In the *Local Bridgeheads* section, select the Microsoft Exchange email server that normal email messages are sent to on the network.



5. Go to the *Address Space* tab. Click *Add -> SMTP -> OK.*
6. The information in the *Address* field shown below must match that of the *Email Domain* field described in the Master Controllers Email Gateway settings screen.



7. This will allow all emails sent to the @TITAN.jtech.com domain to be automatically forwarded and processed by the Master Controller.
8. Click *OK* to save the configuration and return to the Exchange System Manager.



9. The settings can now be tested in the same way as described in the previous section discussing Outlook Express.

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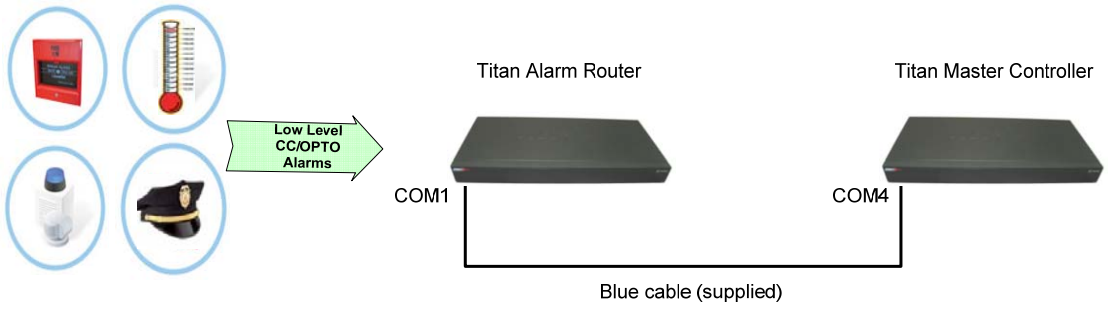
5.2 System with Alarm Inputs (Connected to an Alarm Router)

The Master Controller can be connected to a TITAN Alarm Router for management of alarm inputs. This allows any device to be monitored which can close/open switch contacts or provide a voltage change when an action occurs. A message can be dispatched to a recipient with a delay or escalation if required.



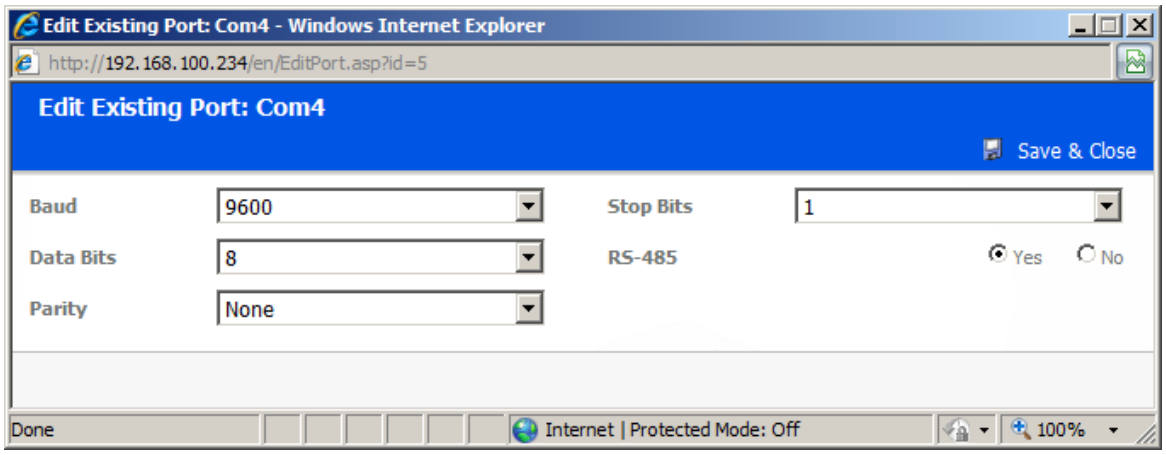
Se

Setting up the System

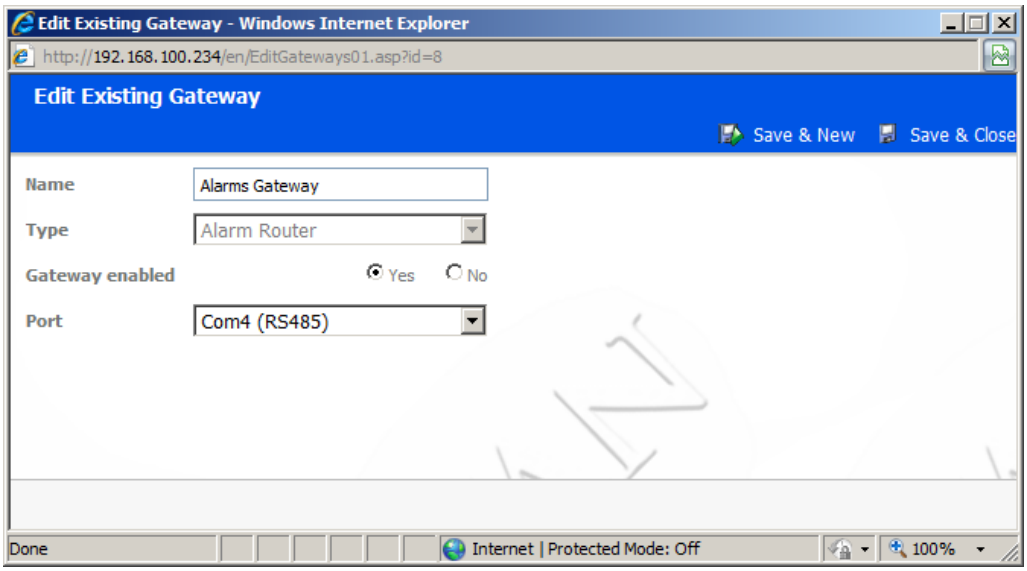
1. The Master Controller unit will need to have an "Alarm Router" license key installed. Contact your place of purchase for this type of license key. In most cases, the Alarm Router itself will not require a license key as it will be operating in RS485 polled mode.
2. Firstly the units need to be connected using their RS485 ports. Run a blue straight-through RJ45-RJ45 cable between COM1 on the Alarm Router and COM4 on the Master Controller.
3. Wire up the alarm inputs and power as described in the Alarm Router User Manual.
4. The RS485 ID and Baud rate must be set on the Alarm Router. Set the baud rate to be 9600bps and the RS485 ID to be 01.
5. Additional Alarm Router units can be added to the system simply by running a blue straight-through RJ45-RJ45 cable between COM1 on the first Alarm Router and COM1 on the next Alarm Router. Each Alarm Router contains two physical RS485 connectors allowing extra units to be daisy chained. On any extra Alarm Router, the Baud rate must also be 9600bps and the RS485 ID must be unique.

5.2.1 Master Controller Settings

1. The *Port* that the Alarm Router will be using must be configured. Since the Alarm Router operates over RS485, Com4 is the only port that can be used with an Alarm Router system.
2. Click *Interfaces* -> *Ports* and click the Edit link next to Com4. These settings can normally be left to default as shown below. Make sure the *RS-485* field is set to *Yes*.



3. Click the Save & Close button to save all changes and return to the previous screen.
4. A gateway will now need to be created. Click *Interfaces -> Gateways*. To add a new gateway, click the Add New button and this screen will be shown.



5. Give the gateway a useful name and select *Alarm Router* in the *Type* drop down box.
6. Select *Com4* (RS485) in the *Port* drop down box.
7. Click the Save & Close button to save all changes.
8. Next we need to configure the individual alarm settings. Click *Interfaces -> Alarm Settings* followed by the Add New button. In this example we will configure alarm input #1 on an Alarm Router with RS485 ID #03. The alarm input will be connected to switch on a freezer door to alert someone if the door is accidentally left open for more than 60 seconds.

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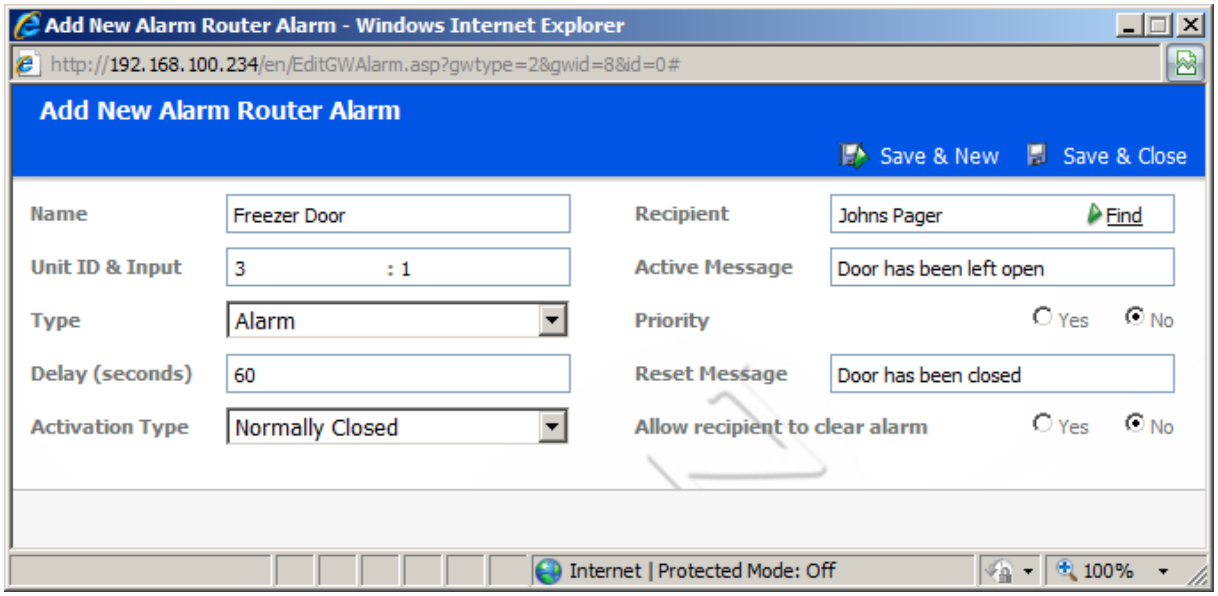

Name – Here you can give the alarm a unique name.

Unit ID & Input – This field is how Master Controller knows which alarm it is currently configuring. The first digit denotes the RS485 ID of the Alarm Router with this alarm. The second digit is the alarm input (1-16).

Type – Choose one of the following options for the type of alarm.

- Alarm: Select this option if management of an alarm is required in both states (active and inactive). When an external input is active, the internal alarm state becomes active and an activation message can be sent. When external input is reset, internal alarm state becomes reset and a reset message can be sent. This type of alarm will be visible in the *Active Alerts* screen.
- Momentary: Select this option if an alarm message needs to be generated when an external input is activated. No internal alarm state is maintained therefore no reset message can be sent for this type of alarm. This type of alarm will not be added to the *Active Alerts* screen.
- Latching: An alarm set to be latching will remain active even after its electrical state has reset. A latched alarm can only be reset by the activation of another external alarm input that has been designated as a "Latch Reset" or "Global Latch Reset".
- Latch Reset: Specifies that the selected external input will reset a latched input. The latched input is selected in the "Latch Reset Alarm" field.
- Global Latch Reset: Specifies that the selected external input will reset any other inputs that may be latched at that time.

IMPORTANT: Some of the following options will not be available, depending on the option selected in the *Type* field.

Delay – The electrical state of the input must persist for this number of seconds before the alarm is activated. Activation delays can be 0 – 65535 seconds (approximately 18 hours)

Activation Type – The activation type must be selected from one of these three options:

- Normally Open: An alarm will initiate when the contacts are closed (dry) or a voltage applied (opto) on the relevant input contacts.
- Normally Closed: An alarm will initiate when the contacts are opened (dry) or the voltage removed (opto) on the relevant input contacts.
- State Change: An alarm will occur every time the input state transitions from one state to another i.e. opened to closed or closed to opened (dry), or upon a voltage transition (opto).

Recipient – Click Find to choose the recipient for this alarm. The recipient may be a contact, user or escalation.

Active Message – The text in this field will be sent to the chosen recipient if the alarm is activated.

Priority – Choose *Yes* to send the message as a priority over other messages.

Reset Message – The text in this field will be sent to the chosen recipient if the alarm is reset.

Allow Recipient To Clear Alarm – The Master Controller can interface with wireless telephony systems such as Kirk, Spectralink and Cisco. If an alarm message is sent to one of these handsets, the user has the ability to clear or 'acknowledge' the alarm. Select *Yes* in this field to enable this feature, otherwise alarms can only be manually cleared on the *Active Alarms* screen.

NOTE: Due to the interaction between certain alarm settings, some combinations are not permitted to be saved to the Alarm Router. These restrictions prevent undesired operation such as not being able to reset alarms or allowing the unit to perform other illogical operations. The table below lists which settings are allowed to co-exist on any single alarm input.

	Latching	Reset Latched Alarms	Momentary	Global Latch Reset	Alarm
Send resets	✓	N/A	N/A	N/A	✓
State change	×	✓	✓	✓	✓
Normally open	✓	✓	✓	✓	✓
Normally closed	✓	✓	✓	✓	✓

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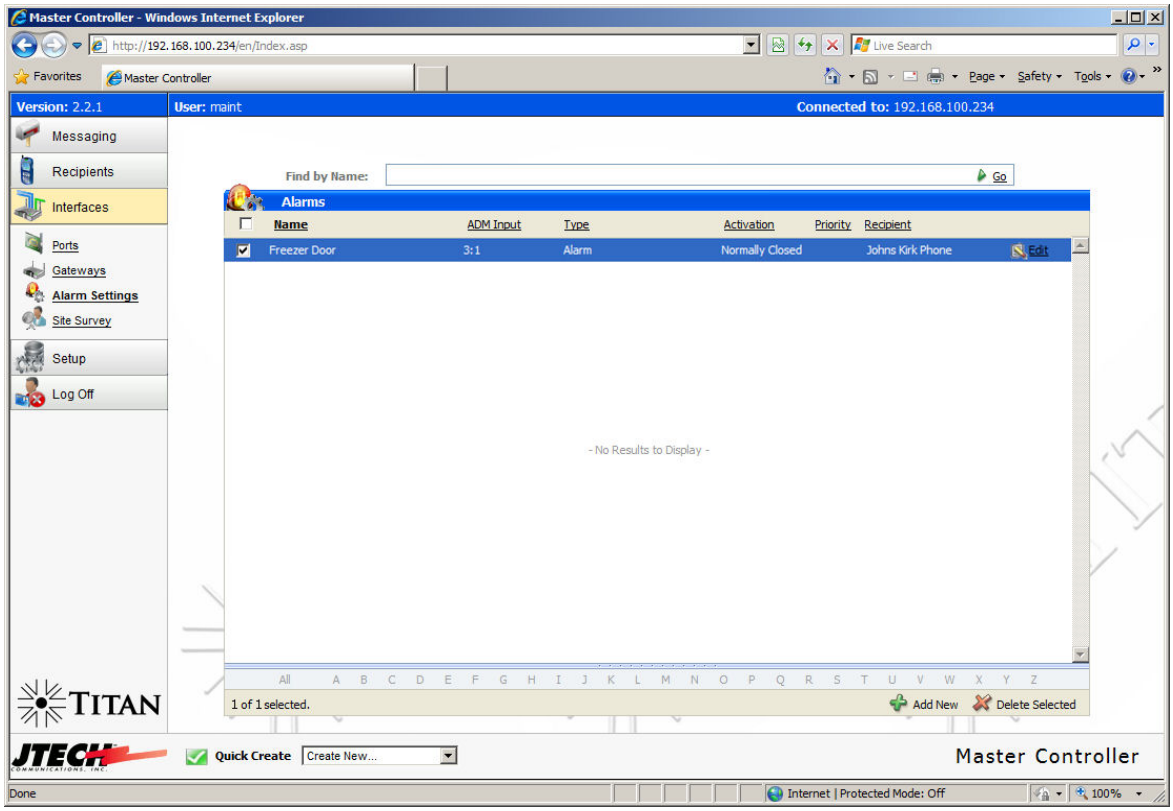
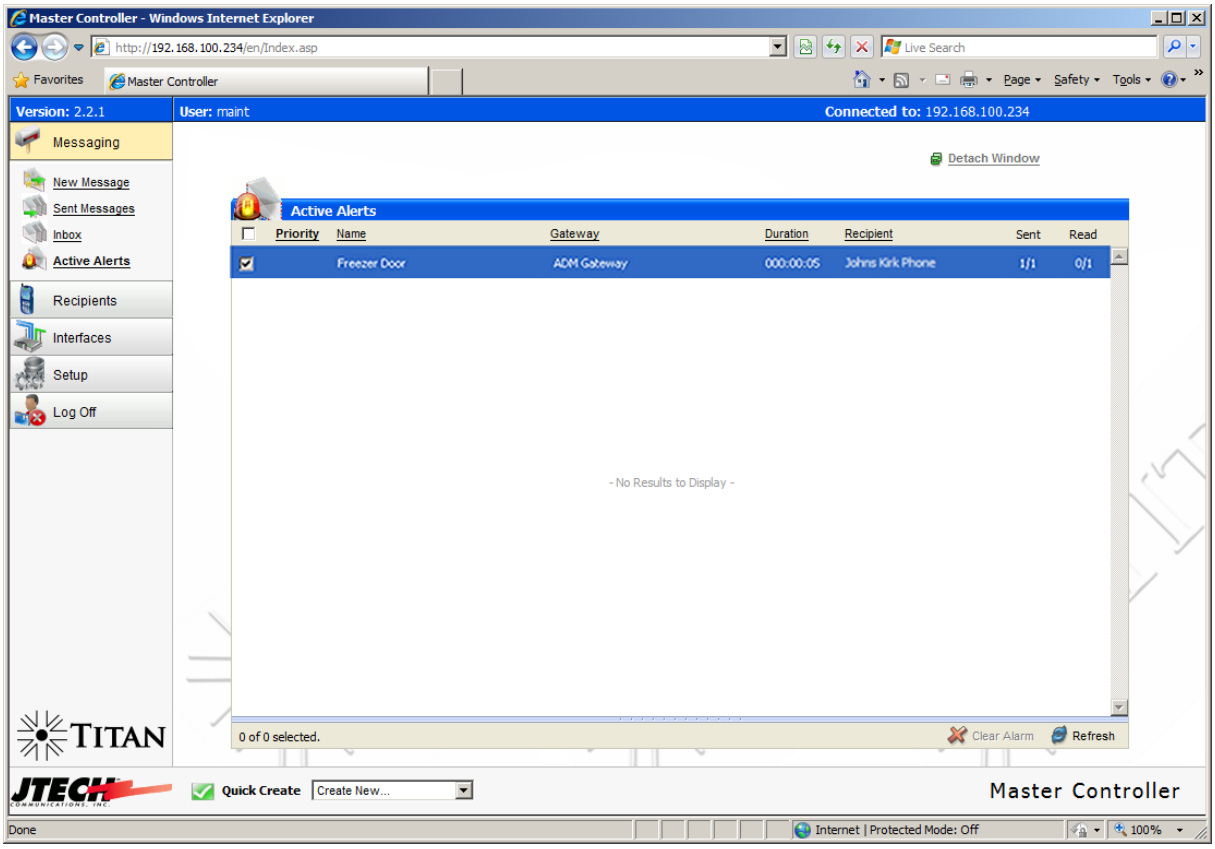
9. Once you have finished configuring the alarm input, click the Save & Close button to save changes and return to the main screen



10. To view the currently active alarms, click *Messaging* -> *Active Alerts*. This window will automatically refresh keeping the status up to date.



11. An alarm can be manually cleared (acknowledged) by selecting the alarm and then clicking the

button.

12. The

link is a useful option as it allows the *Active Alerts Screen* to be detached. If you have a dual monitor setup the detached window can be maximized on one screen while other programs can be opened in the other screen.

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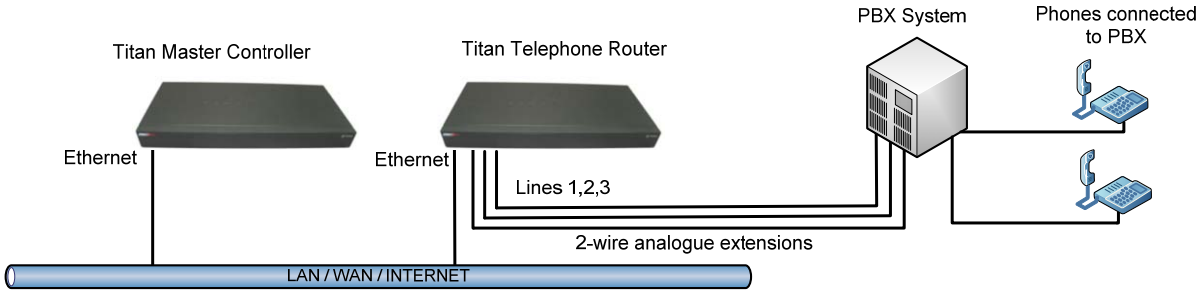
5.3 PBX Paging with a TITAN Telephone Router

Your Master Controller can seamlessly connect to the TITAN Telephone Router for paging over a PBX or standard analogue telephone line. The Master Controller will act as the master whilst any number of Telephone Routers can be connected to the system as slaves.



5.3.1 Setting up the System

1. Both the Master Controller unit and the Telephone Router will need to have a "distributed mode" license key installed. Contact your place of purchase for this type of license key.
2. Consult the Telephone Router user manual for details on how to set up each unit for distributed mode. The most important point is that the IP Address of the Master Controller must be entered into the Telephone Routers in its *Distributed Mode Menu*.
3. The units need to be connected together using their Ethernet ports. There are two ways to achieve this:
    i. Put both devices on a network or LAN using a network hub, switch or over the Internet. This method will make configuration and expansion easier. Note however your network administrator will have to ensure that firewall rules allow communication between the two units.
    ii. Use the supplied red cross-over RJ45-RJ45 cable between the Ethernet port on each module

5.3.2 Master Controller Settings

1. A port or gateway is not required to be setup in the Master Controller for this type of system.
2. The Telephone Router simply queries the Master Controller's recipient database (master) over the network during each step of a call.

5.3.3 Sending a Message

1. The system will now need to be tested. Consult the documentation that came with your Telephone Router for details on operation.

5.4 Configuring a Generic Gateway

The Generic Interface gateway is an extremely flexible method of passing messages from external systems into the Master Controller.

Typical applications include sending fire alarm panel alerts through to pagers and Nurse-call events through to wireless handsets. Basically any simple (or not so simple!) incoming text alert event can be accepted by the Generic gateway and passed out to a multitude of devices and destinations as a text message. Text events and strings can be received by either a wired serial port or by a TCP IP connection.

The core of the Generic Interface gateway is the ***scan string***.

The scan string determines the portions of the incoming text event that are considered to be important or relevant to route the message to a recipient. An incoming event may contain the actual message text, information about who is to receive the text or possibly just ***keywords*** that can be used to determine the recipient.

The scan string is made up of a sequence of commands that can be built up to define the action to be taken upon receipt of a valid message. A command may be a *Length* command, an *Until* command, or a *Match* command. A *Length* Command is of the form *Type*Digit(s)*, an *Until* Command is of the form *Type^Expression*, and a Match Command is of the form *M=Term(s)*.

The Generic Interface is very flexible, and consequently, the scan string can be quite complex. With experience, the scan string may be configured to accept particularly sophisticated messages.

Type (used in Length and Until Commands) may be one of the following:

- ? denotes “Ignore”
- m denotes “Include in message”
- p denotes “Local ID”
- P denotes “Capcode”
- i denotes “Alarm ID (not included in message)”
- I denotes “Alarm ID (included in message)”
- b denotes “Beep Code”

Expression (used in Until Commands) may be one of the following:

- k denotes “Keyword” (not included in message)
- K denotes “Keyword” (included in message)
- @ denotes “Delimiter”
- Term

Term (used in Expressions and Match Commands) refers to a standard string of one or more characters, and is made up of the following:

- Characters not reserved for special meanings (those shown above) may also be used as expressions. If you wish to use one of the characters defined above as expressions, precede these characters with a backslash (\).

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- # followed by one to three digits, representing the decimal ASCII code of the character. Please note that this syntax may also be used in the Start Delimiter, End Delimiter and Separated By fields for the Generic Gateway.

Conditional expressions may also be used by enclosing multiple expressions in curly braces separated by spaces. Some examples of valid commands appear below:

- ?*12 denotes “Ignore 12 characters”
- m*6 denotes “Include the next 6 characters in the message”
- ?^k denotes “Ignore until keyword is received”
- m^K denotes “Message test is anything (after start delimiter) until a keyword is received” and the keyword is to be included in the message.
- m^@ denotes “Include all characters until a delimiter in the message to be sent”
- ?^{ X Y Z } denotes “Ignore all characters until either an X, Y or Z character is received”
- m^#13 denotes “Include all characters in the message to be sent until ASCII character 13 is received”
- ?^\p denotes “Ignore all characters until the character ‘p’ is received”
- p*4 denotes “The next four characters will define the Local ID of the recipient for this message”
- M=Nurse denotes “If the next part of the string is not ‘Nurse’, then do not page send message”

5.4.1 Fire Panel Example

The easiest way to explain the functionality of the Generic Interface gateway is perhaps to look at an example text string.

Consider a system that possibly just alerts when there is a fire in a certain part of a building. Perhaps the system is capable of delivering text out of a serial port at 1200 baud, 8 data bits, no parity and 1 stop bit. The contents of the text string may simply be a pre-programmed location name and the word “FIRE” possibly terminated by a carriage return (CR). Connecting its output to a dumb terminal may result in an output something like:

2007-08-01 13:21 Main Hall FIRE<CR>

So we get the current date and time followed by the location and the word FIRE terminated by a <CR>. One of the first steps with Generic in is to determine what kind of information needs to be sent to the recipient and which recipient needs to receive the information. Another consideration is if the event should trigger an alarm or just a one off message (“send and forget”). See the hints at the end of this section for more information.

Assume that the TITAN Master Controller is already configured with some output gateways and that there are some contacts created and working for messages to be sent to.

The scan string required to pass the above message through to a recipient would be as follows:

m^K?^@

In words this means ‘The message text includes everything up until the keyword, and the keyword is included in the message (Upper case K). Then ignore anything until the end delimiter. The message text sent to the recipient will be as follows:

2007-08-01 13:21 Main Hall FIRE

If the user just wanted the message text without the date and time, the following scan string could be used:

?*16m^K?^@

This would ignore the first 16 characters and then send through the remaining portion of the text including the keyword, i.e.

Main Hall FIRE

5.4.2 More Examples

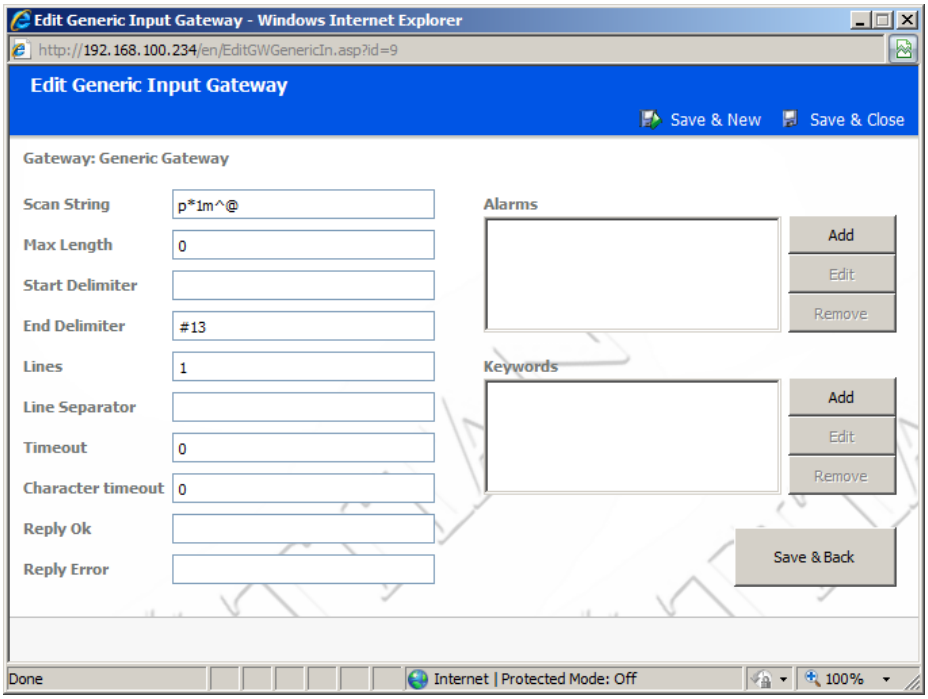
Assume end delimiter of #13 in all cases

Incoming string	666 FIRE Room1 East Wing <CR>
Scan String	p*3m^@
End Result	**FIRE Room1 East Wing** sent to localID 666

Incoming string	FIRE Room1 East Wing <CR>
Scan String	?^Km^@
End Result	**FIRE Room1 East Wing** sent to whatever contact is setup against the keyword FIRE

5.4.3 Real World Example

1. Check the Port settings match that of the external system. (baud rate etc)
2. Create the Generic Interface Gateway
3. If you are using the incoming string to directly address a local ID (“p” option in scan string) then there is no need to create alarms and keywords.



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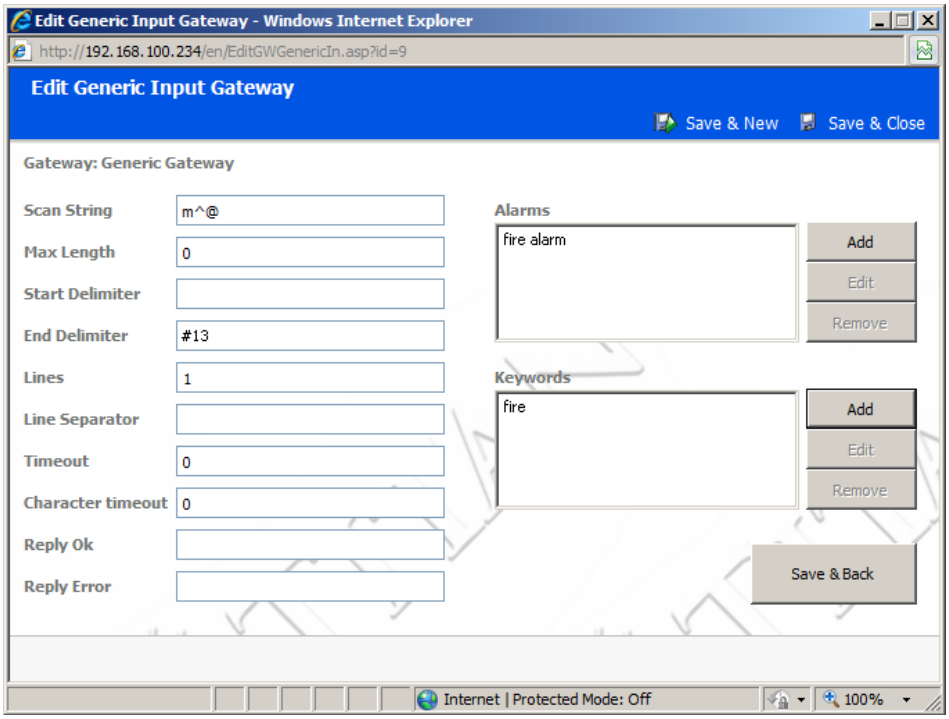
4. This scan string shown below will directly address recipients, no need for alarms or keywords

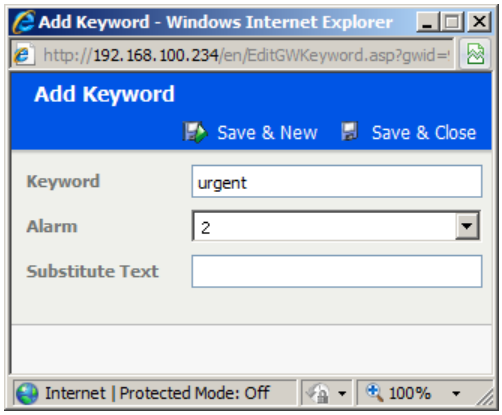
5. If you are not using the incoming string to directly address a local ID (“p” option in scan string) then you will need to create some alarms and keywords

6. Keywords are tied to alarms which determine the action or recipient. Multiple keywords can be tied to one alarm.

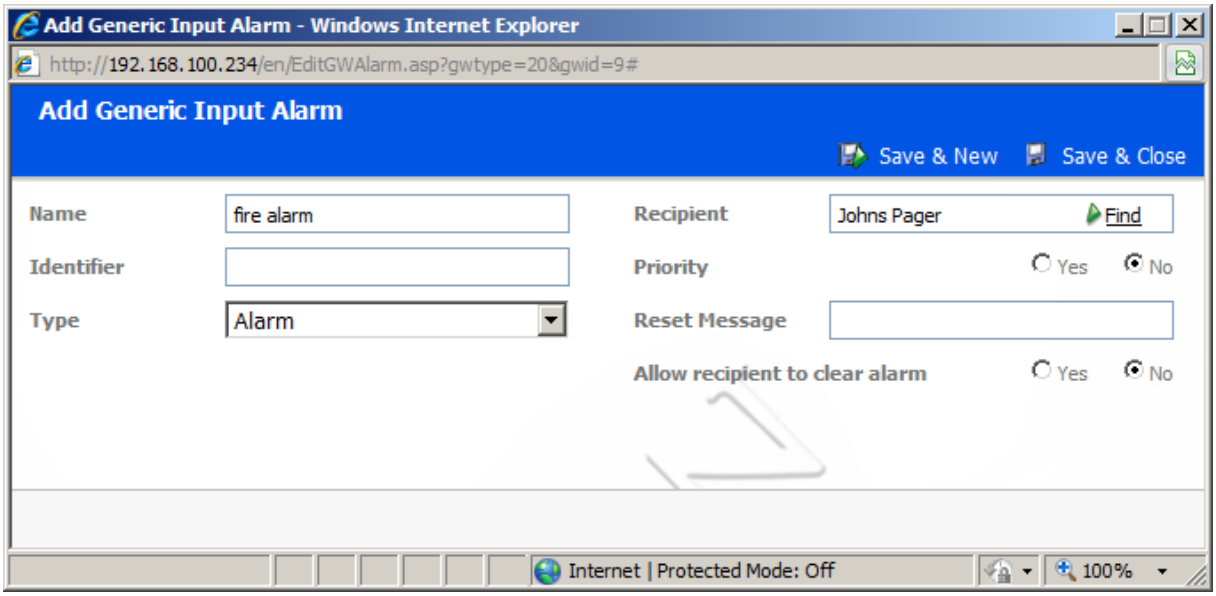
7. This scan string will wait for a keyword then include the rest of the line as the message text.



8. The keyword ***fire*** will trigger the alarm called “fire alarm” which will raise an alarm and sent to the recipient listed.



9. The alarm will be raised and the message sent to the recipient listed.



10. This screen has several sections which will be described in more detail below.

- Name - Give each alarm a unique name.

- Identifier - The alarm identifier is used in conjunction with the scripting interface to identify alarms.

- Type - A generic text event can cause various actions.
  - *Momentary:* Send a message – no alarm raised
  - *Alarm:* Activate an alarm. Optionally send a message to a recipient. Alarm can be reset manually (from GUI) or via 2-way messaging
  - *Latching:* Activate an alarm. Optionally send a message to a recipient. Alarm can be reset manually (from GUI), via 2-way messaging or by a Latch Reset event.
  - *Latch Reset:* Reset selected latched alarms (configurable)
  - *Global Latch Reset:* Reset all active LATCHING alarms that are active against this gateway

NOTE: All alarms are by definition latching and must be cleared by some method. A *latching alarm* in Master Controller is essentially the same as an *Alarm* except that is has the capability of being reset by another generic event. A standard *Alarm* cannot be reset by another generic event and must be cleared by one of the 2 methods listed above.

- Recipient - Select the contact that will receive the alarm message

- Priority - Select if message is high importance

- Reset Message - A message will be sent to the same contact when the alarm is reset.

- Allow Recipient to Clear Alarm - If this alarm triggers a message to a 2-way capable device (i.e. DECT or WiFi phone) then that recipient then has the option of clearing the alarm.

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5.4.4 Generic Interface Hints

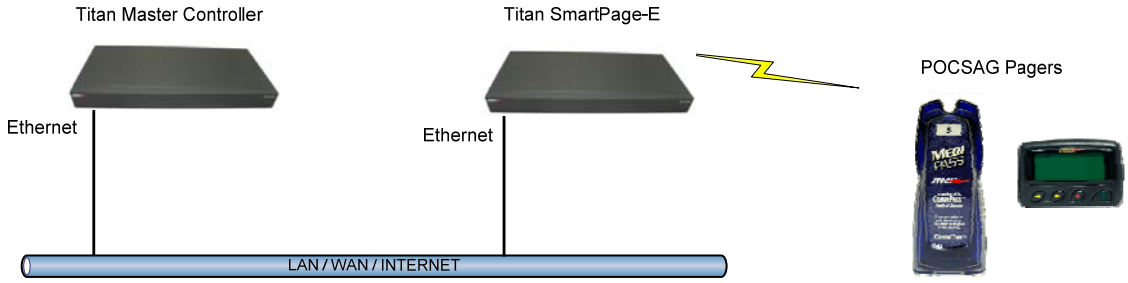
- When entering non-printing characters, enter as **#nn** (ASCII decimal values) i.e. a <CR> in the end delimiter field would be entered as #13

- Keywords are processed in order, so in the below case the full keyword FIRE NOW EMERGENCY will trigger the top entry and FIRE NOW will trigger the lower entry. If the keywords are entered in the opposite order then the FIRE NOW keyword is triggered regardless of which string comes in via the input. Maybe useful for differentiating strings that have keywords at the end.

- The **m** type character can be used more than once. For example a scan string may be:
  ?*10m*3?*9m*7?^@
  This would mean to ignore the first 10 characters in the incoming data, treat the next 3 as the message, ignore the next 9 characters then the next 7 are the remainder of the message. Ignore everything else until the end delimiter. The message text will therefore be the 3 characters and the 9 characters combined into one string.

5.5 POCSAG Paging over IP

The Master Controller can communicate with multiple TITAN products over a network such as a LAN or the Internet. One such product is the TITAN SmartPage-E range of IP based POCSAG transmitters. This connected by an IP connection, sending messages to POCSAG pagers is possible. It also means that existing infrastructure can be utilized rather than the need for long distance custom wiring.

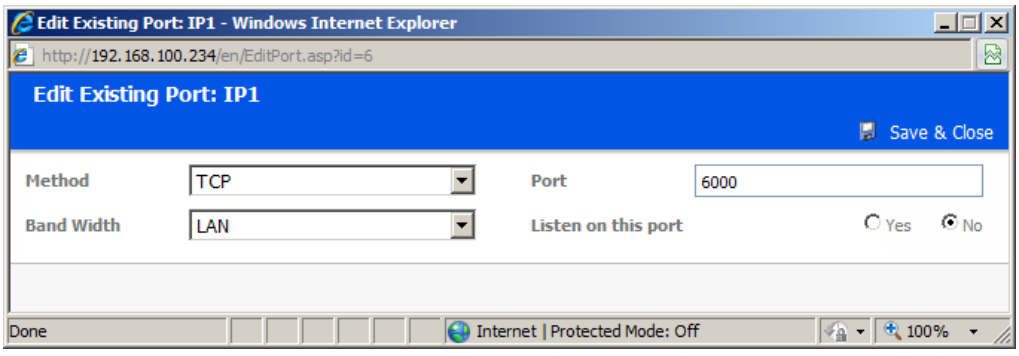


5.5.1 Setting up the System

1. The Master Controller unit will need to have a "TAP" license key installed. Contact your place of purchase for this type of license key.
2. The two units need to communicate over their Ethernet ports, which can be achieved in two ways:
    i. Put both devices on a network or LAN using a network hub, switch or over the Internet. This method will make configuration and expansion easier. Note however your network administrator will have to ensure that firewall rules allow communication between the two units.
    ii. Use the supplied red cross-over RJ45-RJ45 cable between the Ethernet port on each module

5.5.2 Master Controller Settings

1. The *Port* that the SmartPage-E unit will be using must be configured. In this example we will use the TAP over IP protocol.
2. Click *Interfaces* -> *Ports* and click the Edit link next to an unused IP port.



3. For this type of system, leave the *Method* field set to *TCP*.

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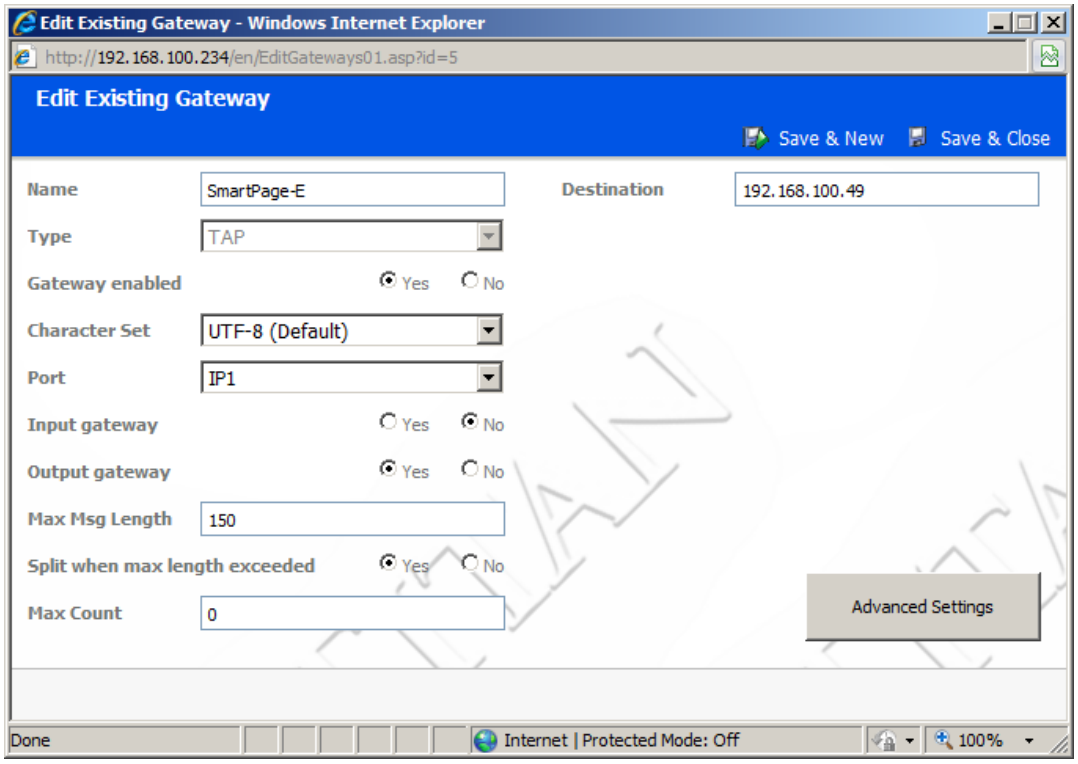
4. In the *Bandwidth* field, select the speed of the network connection between the SmartPage-E and Master Controller unit.
5. The *Port* field must match that of the Port setting in the SmartPage-E unit. Setting up the SmartPage-E unit is discussed in the next section.
6. The remaining field, *Listen on this Port*, should be set to *No* since this is an outgoing TAP gateway only.
7. Click the Save & Close button to save all changes and return to the previous screen.
8. A gateway will now need to be created. Click *Interfaces -> Gateways*. To add a new gateway, click the Add New button and this screen will be shown.

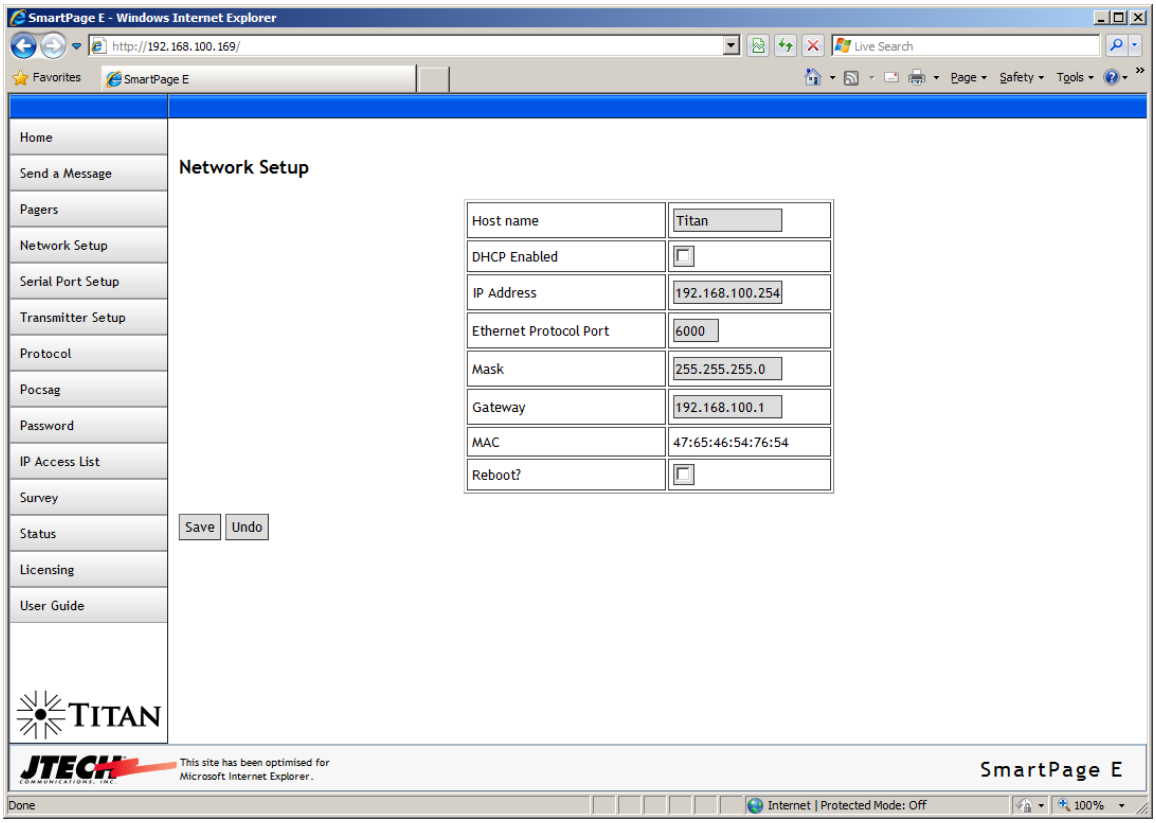


9. Give the gateway a useful name and select *TAP* in the *Type* drop down box.
10. The *Character Set* field determines the character set used when sending TAP messages. For more details on language support and code page settings contact your dealer or JTECH. If in doubt please use the default character set (UTF-8).
11. Master Controller needs to know which *Port* it will be using for communication with the SmartPage-E. Using the drop down box, select the *Port* that you configured above. (*IP1* in the example above)
12. The *Input Gateway/Output Gateway* option determines whether this gateway is used to accept or dispatch TAP messages. Either option can be selected but in this example the gateway will be functioning as an *Output gateway*.

13. The *Max Msg Length* and *Split when max length exceeded* options are very useful to control long outgoing messages. The *Max Msg Length* setting is the maximum number of characters that an outgoing message will be limited to. (use 0 for unlimited).
14. The Master Controller needs to know the IP Address of the SmartPage-E unit in order to communicate with it. The *Address* field is where this IP Address is entered. Setting up the SmartPage-E unit is discussed in the next section.
15. Click the *Advanced Settings* button.
16. Some service providers will require a TAP password in order to send messages. SmartPage-E does not use a password, so simply leave these fields blank.
17. Click the Save & Close button to save all changes and return to the previous screen.

5.5.3 SmartPage-E Settings

1. There are three important screens that must be setup on the SmartPage-E unit in order for this system to operate. Firstly log into to your SmartPage-E unit via its web interface. Remember the login credentials are username “maint” with no password.
2. Click the *Network Settings* menu. Turn off *DHCP* and give the unit a unique fixed *IP Address* on the network. This IP address will need to be entered in the gateway settings on the Master Controller.



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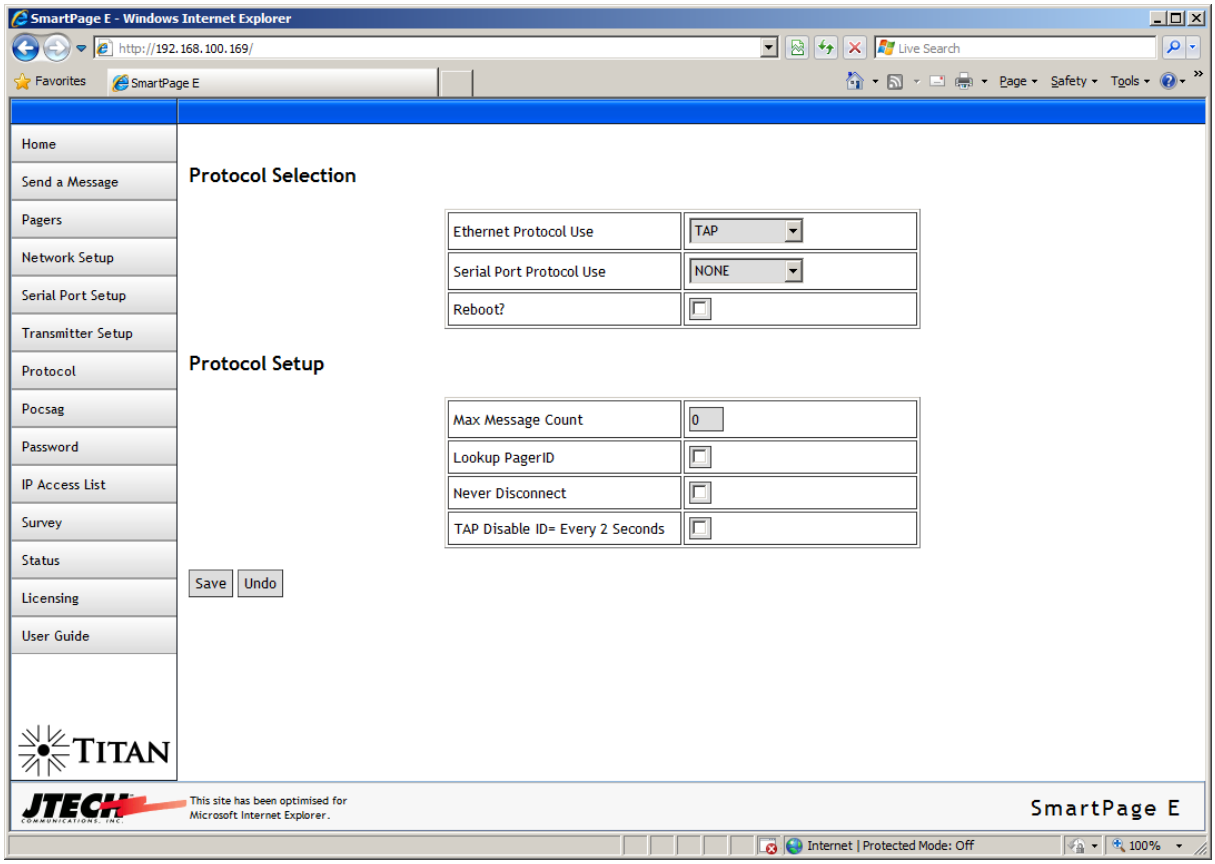
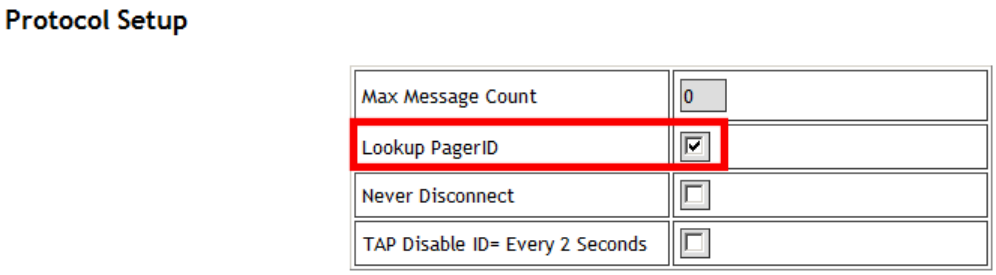
3. Click the *Protocol* menu. Make sure the *Ethernet Protocol Use* is set to TAP.

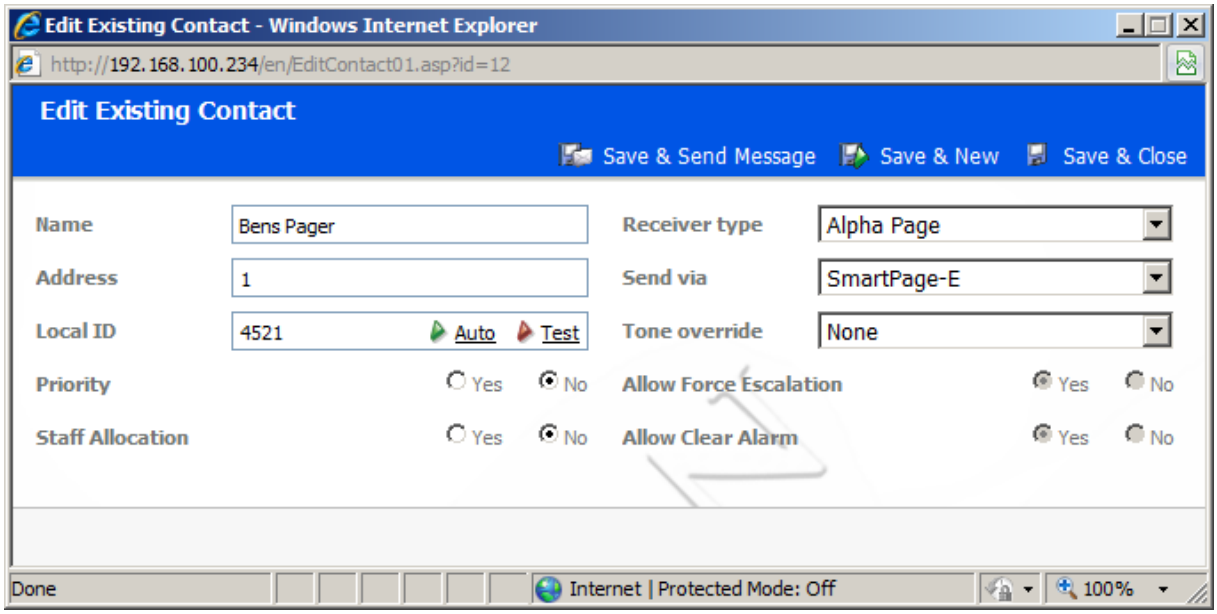


4. There are two ways of setting up messaging with this type of system.

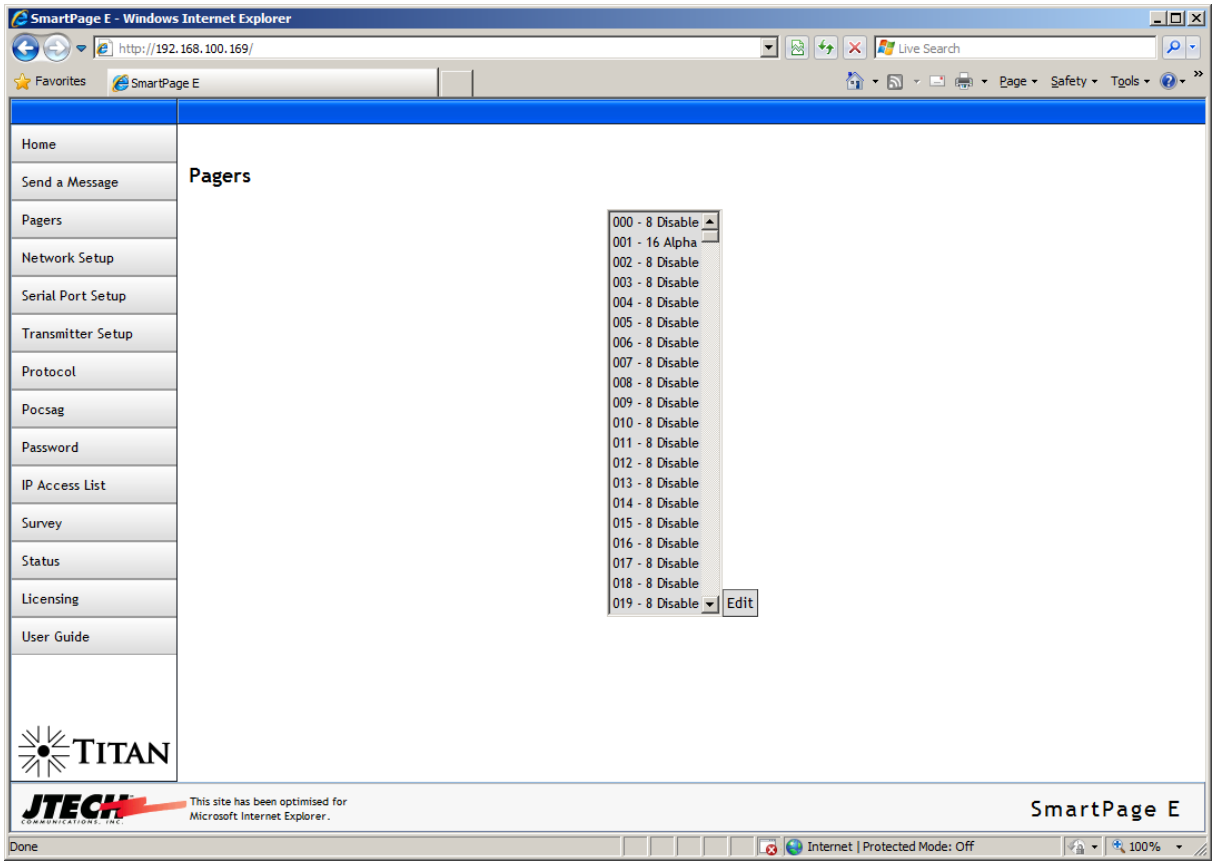
   i. In the TITAN SmartPage-E, tick Lookup Pager ID – This means that the address for each recipient in the Master Controller must be a Local ID. SmartPage-E will look up the Local ID in its internal database and determine the cap code that it should be sending this message to.



For example, the recipient in the Master Controller below is address 1.



The SmartPage-E will look up its internal pager database and determine that it should be send the message to cap code 16.



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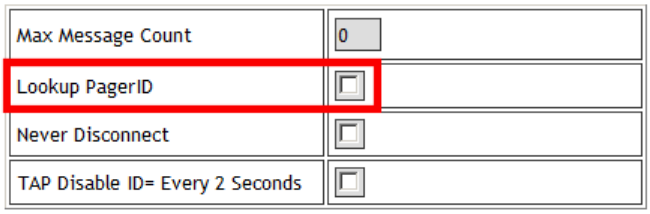
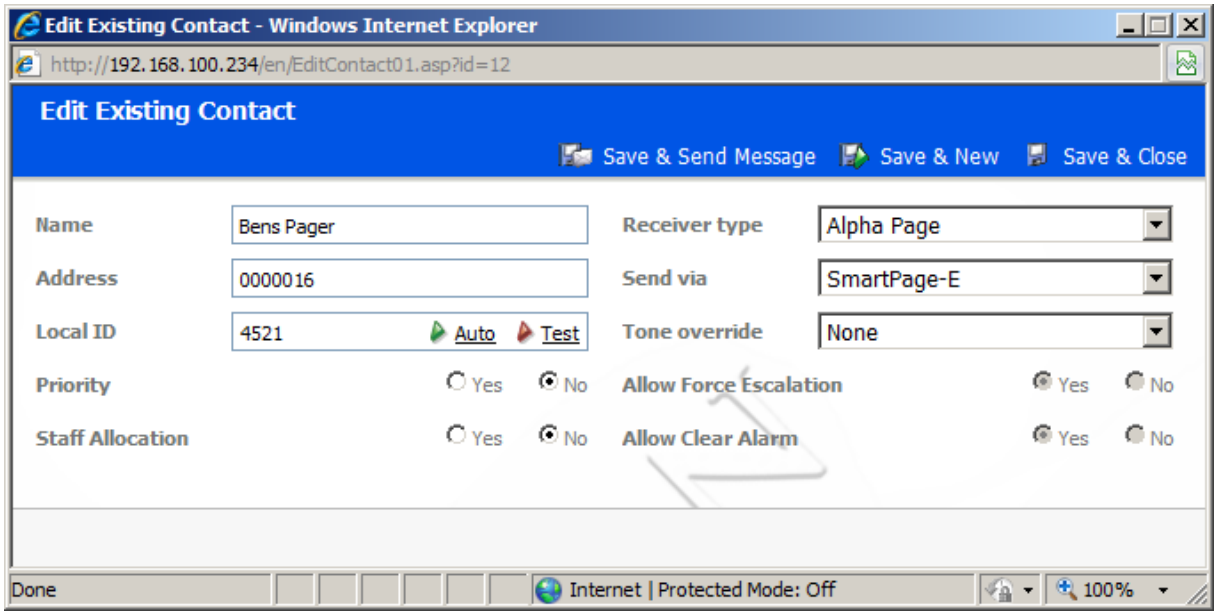
ii. In the TITAN SmartPage-E, do not tick Lookup Pager ID - Alternatively the Master Controller can be configured so that the address for each recipient in the Master Controller will be a cap code.

Protocol Setup

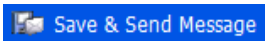


For example, the recipient in the Master Controller below is address 16.



SmartPage-E will simply send the message straight out on the required cap code (16). This method is recommended as it allows all database configurations to stay in one place. (The Master Controller)

5.5.4 Sending a Message

1. To test the new TAP over IP output gateway is working properly, you will need a pager with a known cap code.
2. The pagers baud rate (512/1200/2400bps) and will need to match that of the setting in SmartPage-E on the *POCSAG* menu.
3. The frequency of the pager will also need to match that of the transmitter inside the SmartPage-E unit.
4. Create a new contact. *Recipients -> Contacts -> Add New.*
5. The *Address* field should contain the cap code of the test pager. In the *Send via* field, choose the TAP out via IP gateway that you created in the previous section.
6. Finally click the 

button. Type a test message and click *Send*. The pager should display the message you typed. If the pager does not receive the message, check important settings such as the baud rate, frequency and cap code.

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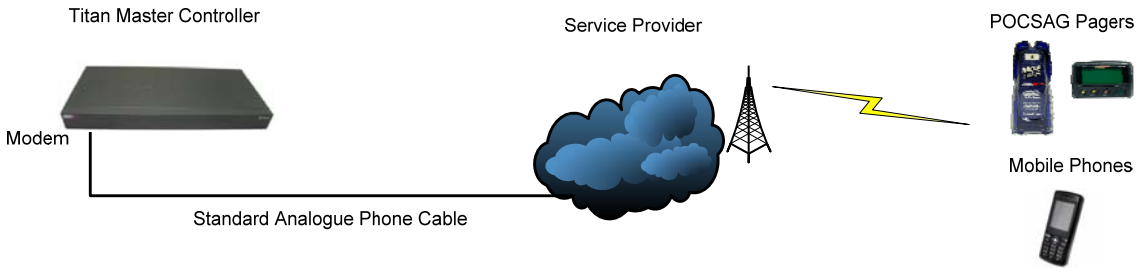
5.6 TAP Protocol using Dialup Modem

The Master Controller can communicate with TAP SMS/Paging service providers and wide area pager carriers via its built in modem.

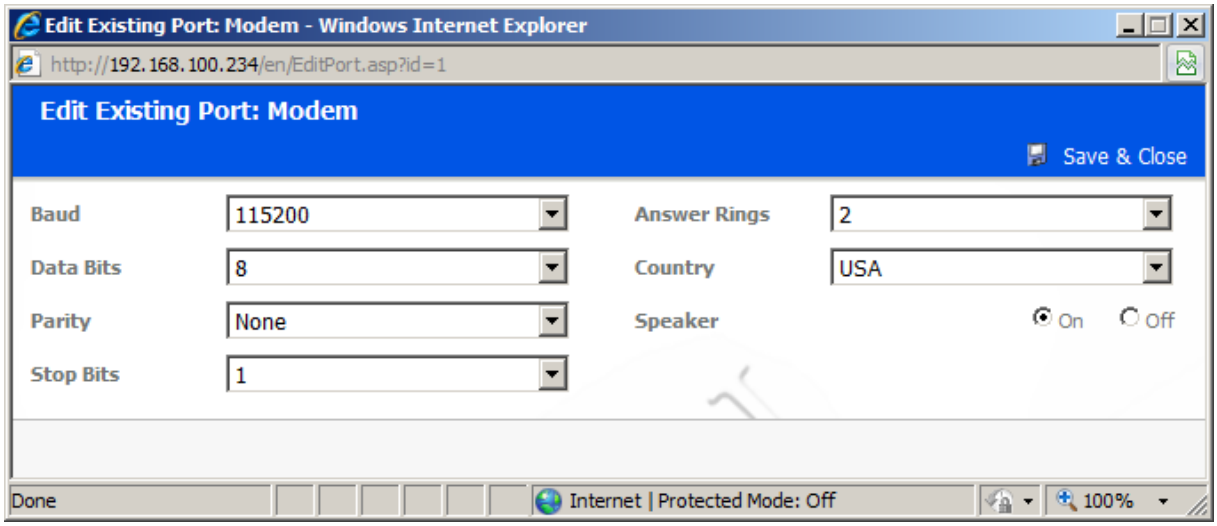


5.6.1 Setting up the System

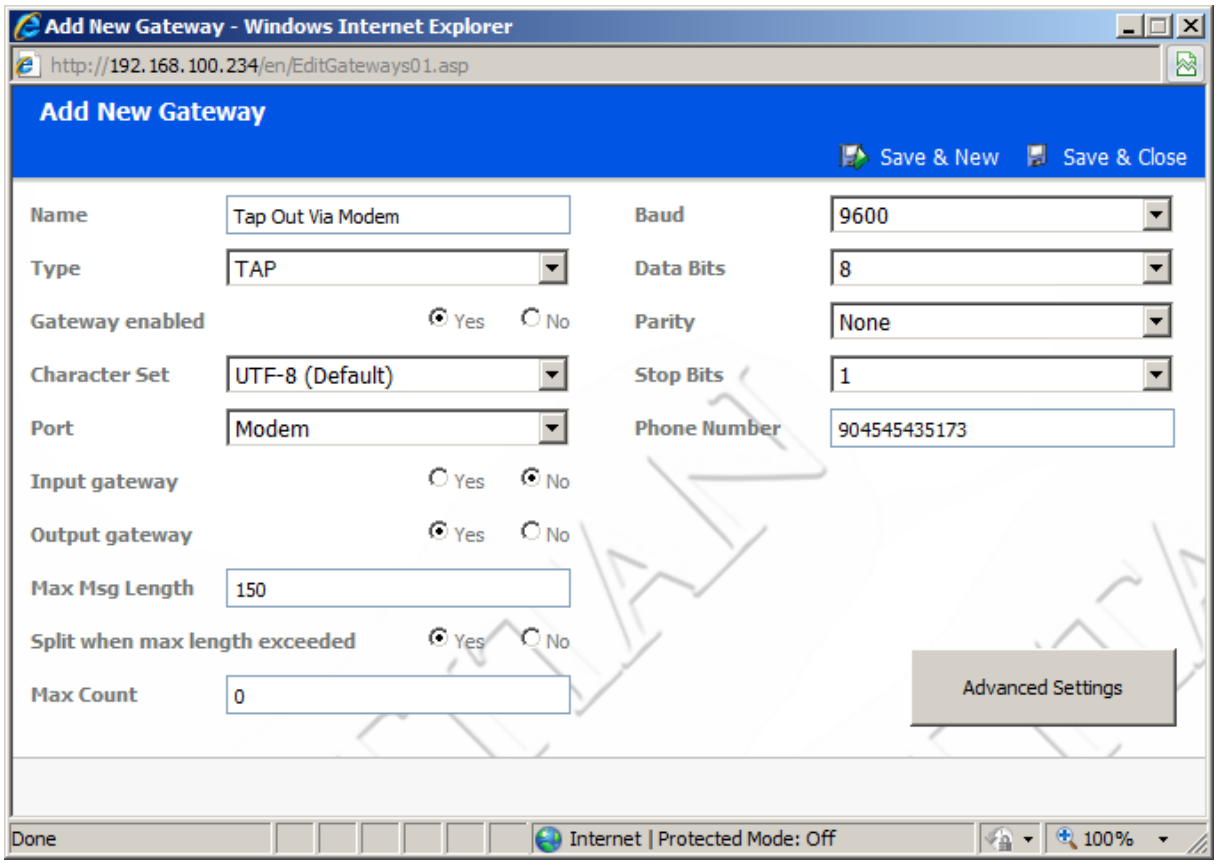
1. The Master Controller unit will need to have a "TAP" license key installed. Contact your place of purchase for this type of license key.
2. Run a standard RJ12-RJ12 phone cable from the *Modem* connector on the Master Controller to the analogue phone line that will be used for outgoing calls.

5.6.2 Master Controller Settings

1. First of all, the modem port must be configured.
2. Click *Interfaces -> Ports* and click the Edit link next to the *Modem Port*.



3. The *Baud, Data bits, Parity* and *Stop* bit fields can be left to their default settings as shown above. These settings determine the speed of connection between the Master Controller hardware and its internal modem.
4. To comply with local telecommunication regulations, you must select the *Country* where the Master Controller unit is situated.
5. The Master Controller contains a speaker on board which can be used to provide an audible indication of dial tones and handshaking during calls. Select *Off* to disable sounds.
6. Click the Save & Close button to save all changes and return to the previous screen.
7. A gateway will now need to be created. Click *Interfaces -> Gateways*. To add a new gateway, click the Add New button and this screen will be shown.



8. Give the gateway a useful name and select *TAP* in the *Type* drop down box.
9. The *Character Set* field determines the character set used when sending TAP messages. For more details on language support and code page settings contact your dealer or JTECH. If in doubt please use the default character set (UTF-8).
10. Master Controller needs to know which *Port* it will be using for communication. Using the drop down box, select the *Modem*.

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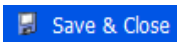
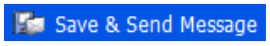
11. The *Input Gateway/Output Gateway* option determines whether this gateway is used to accept or dispatch TAP messages. Either option can be selected but in this example the gateway will be functioning as an *Output gateway*.
12. The *Max Msg Length* and *Split when max length exceeded* options are very useful to control long outgoing messages. The *Max Msg Length* setting is the maximum number of characters that an outgoing message will be limited to. (use 0 for unlimited).
13. The *Baud, Data bits, Parity* and *Stop* bit fields determine the connection speed between the Master Controllers internal modem and the remote device that it is calling. The settings must match those used by the remote system. You should contact your carrier or service provider for these settings.
14. In the *Phone Number* field, enter the phone number of the remote system the Master Controller will be dialing.
15. Click the *Advanced Settings* button.
16. Some service providers will require a TAP password in order to send messages. Contact your carrier or service provider for this information.
17. Click the 

button to save all changes and return to the previous screen.

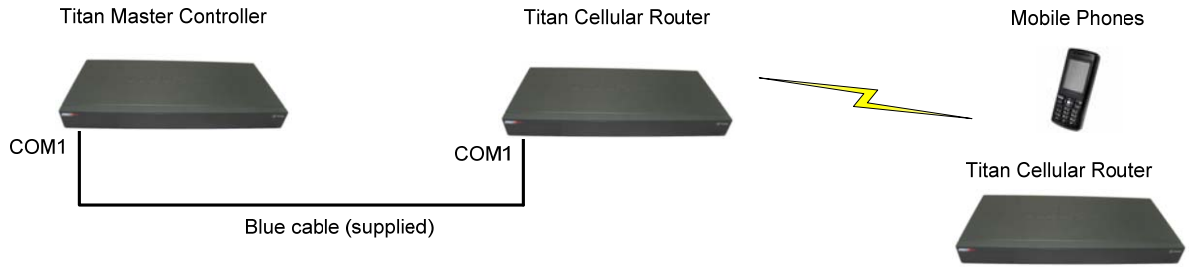
5.6.3 Sending a Message

1. Create a new contact. *Recipients -> Contacts -> Add New.*
2. There are two types of TAP service providers.
    a. Service providers used to send SMS to cell phones
    b. Service providers used to send text messages to wide area pagers
3. Depending on the receiving device, the *Address* field should contain the ID, cap code or cell phone number of the recipient you wish to contact. In the *Send via* field, choose the TAP out via Modem gateway that you created in the previous section.
4. Finally click the 

button. Type a test message and click *Send*.

5.7 SMS (Short Message Service to Cell Phones using Cellular Router)

In conjunction with a TITAN Cellular Router, Master Controller can send SMS messages directly to cell phones anywhere in the world. The system can also receive SMS and route these messages out to the required recipients pager, email or wireless telephony handset.

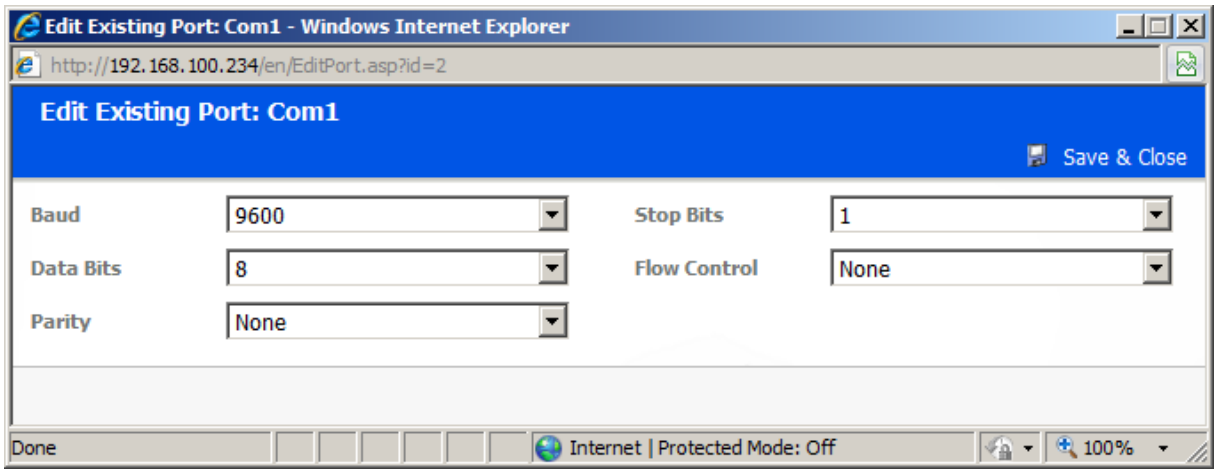


5.7.1 Setting up the System

1. The Master Controller unit will need to have a "Cellular Router" license key installed. Contact your place of purchase for this type of license key.
2. The two units need to be connected using a straight through RJ45-RJ45 cable such as the supplied blue cable. Connect the *Com1* on the TITAN Cellular Router to a spare *Com* port on the TITAN Master Controller.

5.7.2 Master Controller Settings

1. First of all, the Com port must be configured.
2. Click *Interfaces* -> *Ports* and click the Edit link next to the *Com* port the Cellular Router is connected to.



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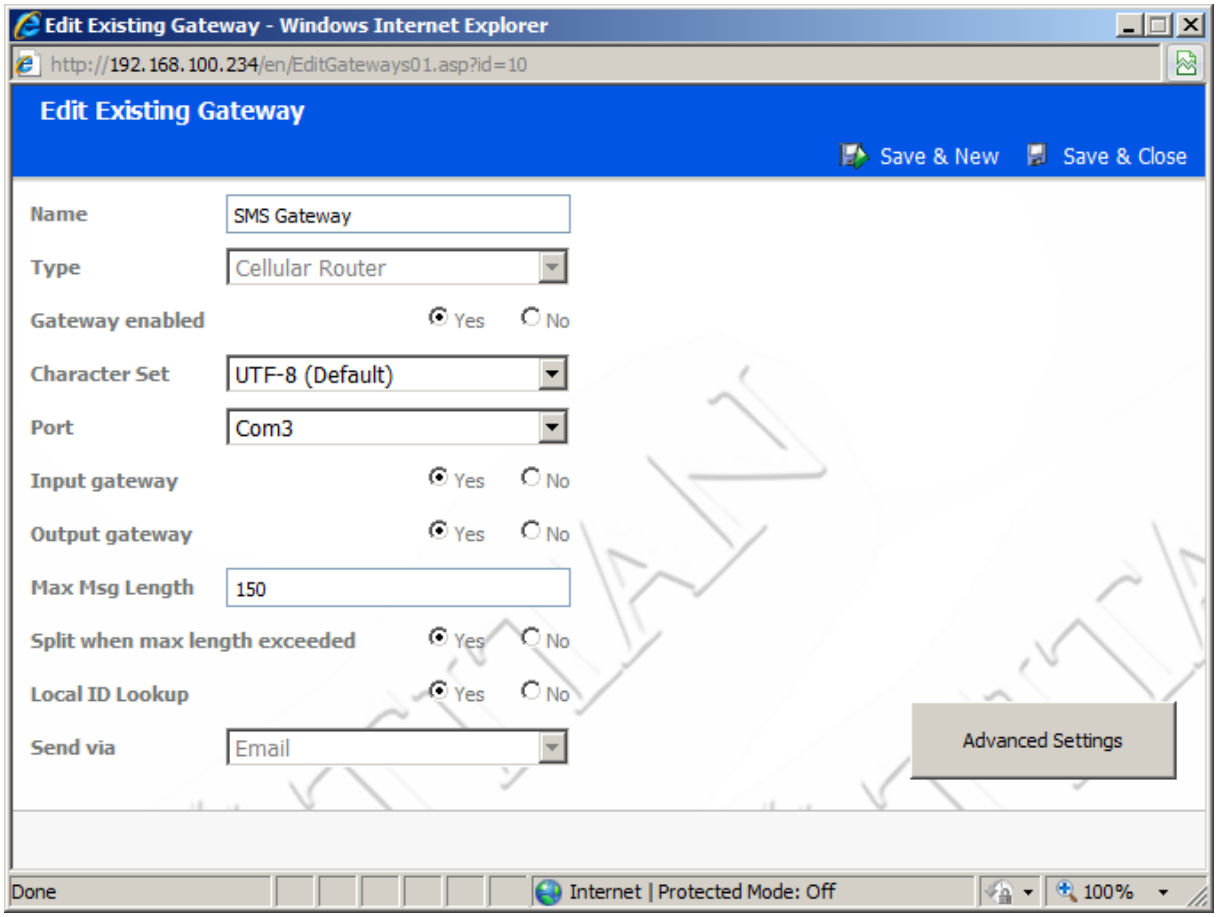
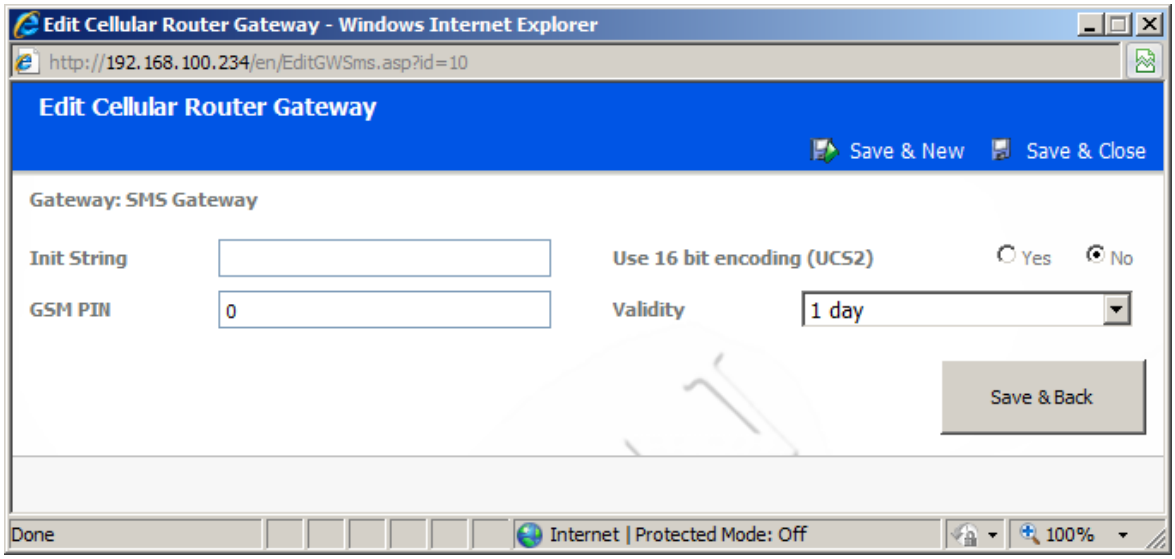
3. The *Baud, Data bits, Parity* and *Stop* bit fields should be left to their default settings as shown above when connecting to a Cellular Router. These settings determine the speed of connection between the Master Controller and the external modem (Cellular Router).
4. Click the Save & Close button to save all changes and return to the previous screen.
5. A gateway will now need to be created. Click *Interfaces -> Gateways*. To add a new gateway, click the Add New button and this screen will be shown.



6. Give the gateway a useful name and select *Cellular Router* in the *Type* drop down box.
7. The *Character Set* field determines the character set used when sending SMS messages. For more details on language support and code page settings contact your dealer or JTECH. If in doubt please use the default character set (UTF-8).
8. The Master Controller needs to know which *Port* it will be using for communication. Using the drop down box, select the *Com* port you configured above.
9. The *Input Gateway/Output Gateway* option determines whether this gateway is used to accept or dispatch SMS messages (or both). In this example select *Yes* for both.

10. The *Max Msg Length* and *Split when max length exceeded* options are very useful to control long outgoing messages. The *Max Msg Length* setting is the maximum number of characters that an outgoing message will be limited to. (use 0 for unlimited).
11. If the gateway is setup as an input gateway, you will see two extra fields named *Local ID Lookup* and *Send Via*. These settings determine the how a valid incoming message is routed out of the Master Controller. This will be discussed in detail in the *Receiving SMS* section below.
12. Click the *Advanced Settings* button.



13. If you are using a third party cellular modem, it may require an *Init String*. If using the TITAN Cellular Router leave this field blank.
14. For security purposes, some SIM cards have a PIN which must be entered before messages can be sent. If the SIM you are using requires a PIN enter it in the *GSM PIN* field.
15. The *Use 16 bit encoding (UCS2)* field should be set to *Yes* if you are sending messages to international languages such as Chinese, Japanese, Korean etc. For English, this field can be left set to *No* and messages will 7 bit encoded.
16. The *Validity* field tells the SMS service provider how long to store a message before it is discarded, even if the message has not been read.
17. Click the Save & Close button to save all changes and return to the previous screen.

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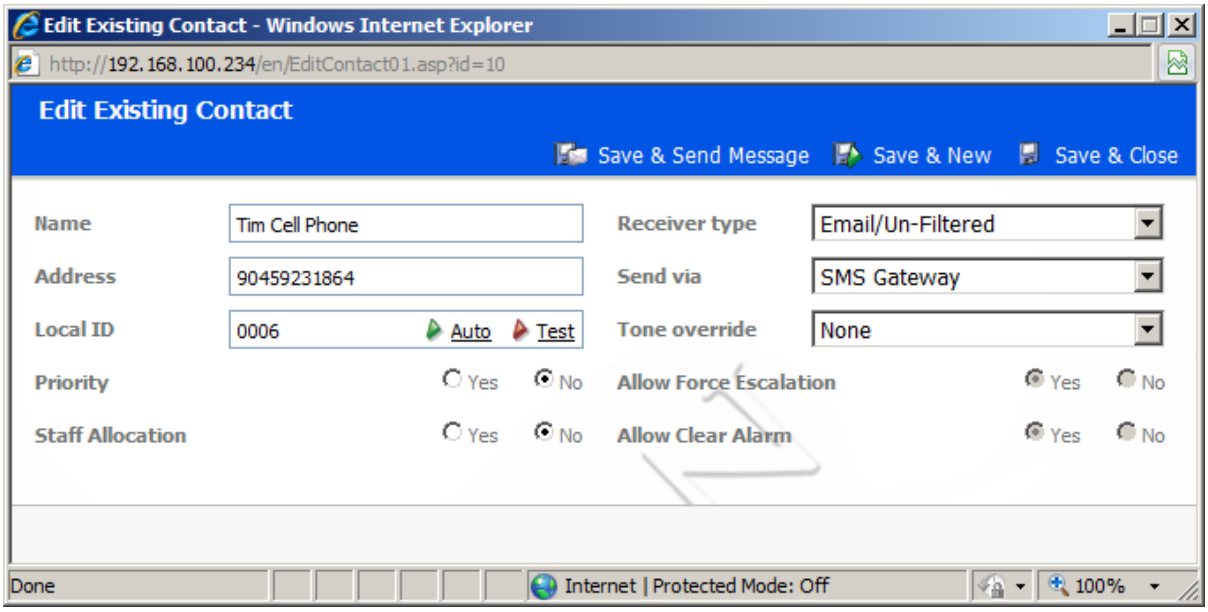
5.7.3 Sending SMS

1. Create a new contact. *Recipients -> Contacts -> Add New.*



2. In the *Address* field enter the cell phone number of the person you wish to contact.

   NOTE: Cell phone numbers can be in international format (leading "+")

3. Select the SMS gateway in the *Send Via* drop down box.
4. Set *Receiver Type* to *Email/Unfiltered.*
5. Finally click the Save & Send Message button. Type a test message and click *Send*. After a short time the message will appear on your cell phone.

5.7.4 Receiving SMS

1. In order for Master Controller to receive and process SMS messages, you must know the cell phone number of the SIM card installed in the Cellular Router.
2. The format for sending a message depends on the Local ID Lookup field in the gateway setting.

   a. Local ID Lookup = Yes – Setting this field to *Yes* means, incoming messages will be scanned for a Local ID. This allows messages to be sent out via any gateway. SMS messages sent to the Cellular Router should be in the following format.

Local ID lookup

002 test *will send the message "test" to the recipient with Local ID 2*

b. Local ID Lookup = No – Setting this field to *No* means incoming messages will be scanned for an Address. You will need to select the gateway that messages will be routed to using the *Send Via* field. This means that messages can only be sent out via one gateway. SMS messages sent to the Cellular Router will be in a different format depending on the selection in the *Send Via* field as follows.

Send via SMS gateway

0414854657 test *will send the message "test" to the cell phone number 0414854657*

Send via Email gateway

support@jtech.com test *will send the message "test" to support@jtech.com*

Send via POCSAG gateway

0000008 test *will send the message "test" to the pager with cap code 8*

Send via gateway which uses Local ID to communicate with another system such as SmartPage-E

002 test *will send the message "test" to the recipient with Local ID 2*

3. If an SMS messages is sent to a *User*, the message will appear in their *Inbox* when they log in to the web interface.

4. Incoming SMS messages that do not have an addressee (i.e. no prefix to indicate local ID) are sent to maintenance recipient first then local ID 0 if no maint.

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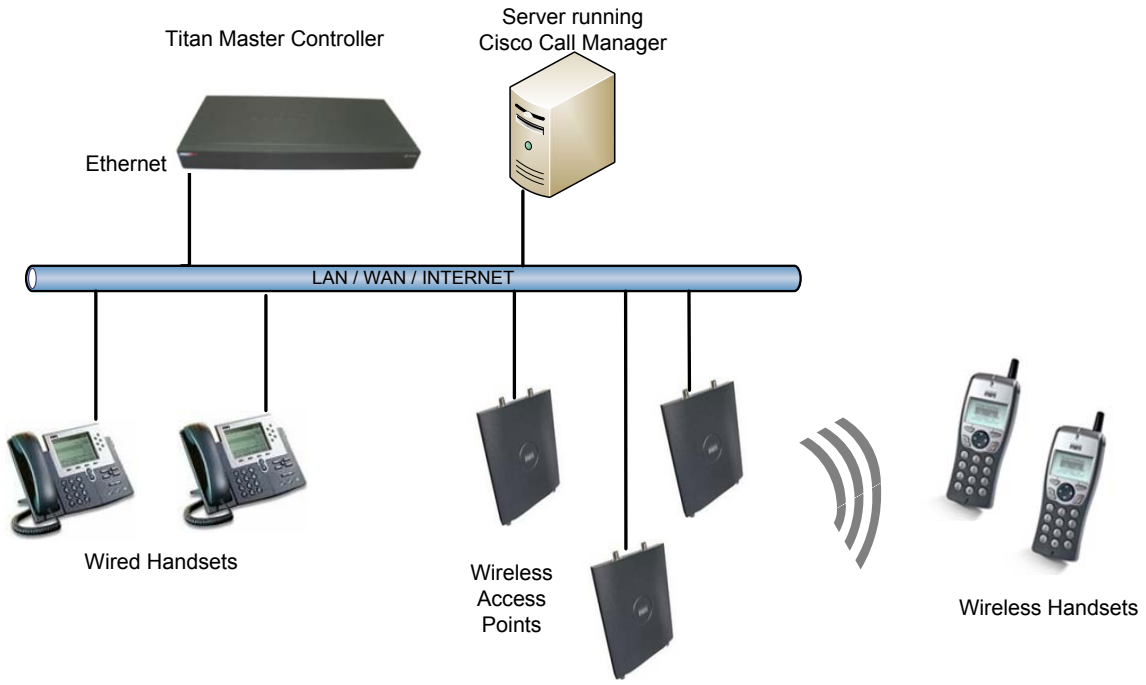
5.8 Messaging to Cisco System

The Master Controller supports connection to Cisco Call Manager making it possible to send messages to Cisco wireless and wired handsets.

NOTE: For a list of supported Call Manager or Unified Communications Manager versions and supported handsets, see the Technical Specifications section of the Appendix.

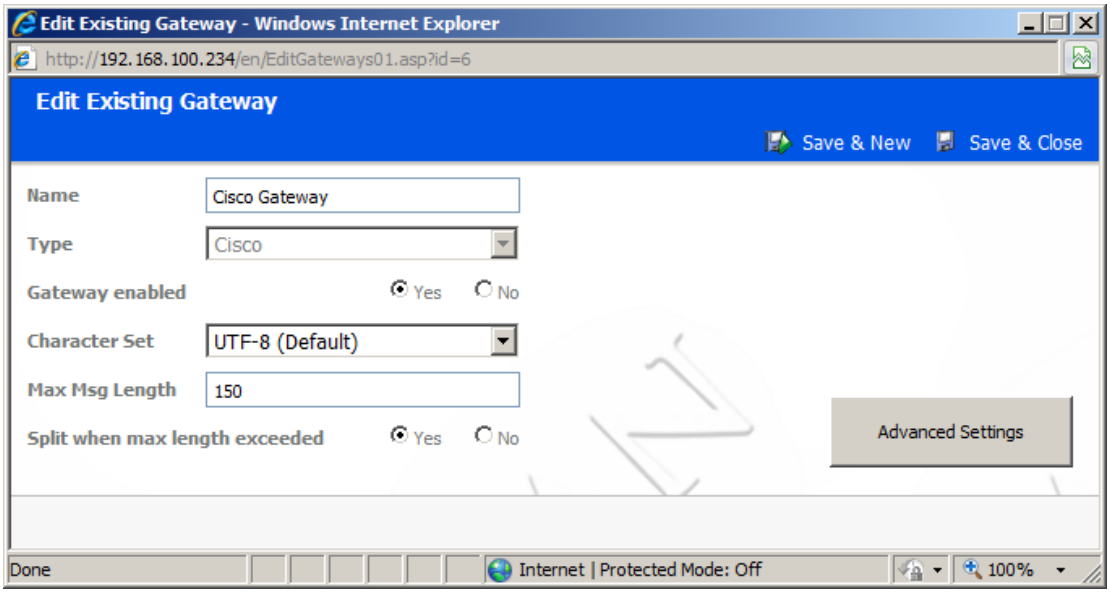
5.8.1 Setting up the System

1. The Master Controller unit will need to have a "Cisco" license key installed. Contact your place of purchase for this type of license key.
2. The Cisco system and Master Controller need to be connected together in order to communicate.

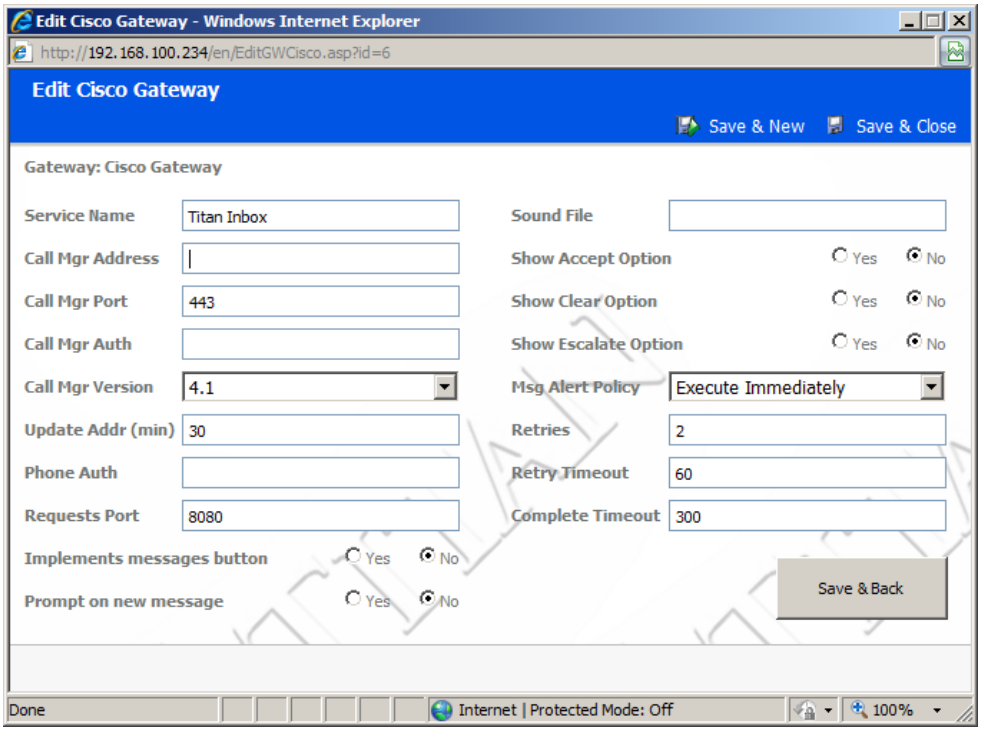


5.8.2 Master Controller Settings

1. First of all, a gateway will need to be created. Click *Interfaces -> Gateways*. To add a new gateway, click the Add New button and this screen will be shown.



2. Give the gateway a useful name and select *Cisco* in the *Type* drop down box.
3. The *Character Set* field determines the character set used when sending Cisco messages. For more details on language support and code page settings contact your dealer or JTECH. If in doubt please use the default character set (UTF-8).
4. The *Max Msg Length* and *Split when max length exceeded* options are very useful to control long outgoing messages. The *Max Msg Length* setting is the maximum number of characters that an outgoing message will be limited to. (use 0 for unlimited).
5. Click the *Advanced Settings* button.



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6. This screen contains several mandatory fields which must be filled correctly for the system to operate.
   - **Service Name:** The name of the inbox that will be shown in phone.
   - **Call Mgr Address:** The IP address or computer name of the server hosting Cisco Call Manager.
   - **Call Mgr Port:** The port that Cisco Call Manager uses to accept HTTPS requests.
   - **Call Mgr Auth:** The authorization string that Call Manager requires, to be able to make an HTTP request. Usually consists in a string like "user:password" (without the quotes).
   - **Call Mgr Version:** Select the version of Call Manager software you are using.
   - **Update Addr (min):** This field adjusts how often the Master Controller polls Call Manager for the active device list and current IP addresses. This time should be reduced (i.e., 1 – 3 minutes) if the phones change IP addresses frequently or can roam from one WLAN to another. However reducing this time may cause message delays if there are hundreds or thousands of devices in the response from Call Manager.
   - **Phone Auth:** Another authorization string required by the phone when Master Controller sends an HTTP request directly to it. Usually consists in a string like "user:password" (without the quotes).
   - **Requests Port:** The port in which Master Controller will be listening for phone requests.
   - **Implements Messages button:** The messaging service can be implemented either through the handsets "Messages" button or the "Services" button, this option establishes which of the services is being used.
   - **Prompt on new message:** This option is used when a new message is sent to the handset. If "Yes" is selected a notification of a new message will be sent, if "No" is selected the actual message will be sent.
   - **Sound File:** Name of the sound file that will be played when a message is sent (this file has to exist in the Cisco system FTP server).
   - **Show Accept Option:** This option is used to display or not the "Accept" option in the handset when a message is sent.
   - **Show Clear Option:** This option is used to display or not the "Clear" option in the handset when a message is sent.
   - **Show Escalate Option:** This option is used to display or not the "Escalate" option in the handset when a message is sent.
   - **Msg Alert Policy:** This option applies to messages sent directly to phones. That is, when a new message or a notification is sent to the phone this message will be shown in the phone taking into account the value of this field.
   - **Retries:** Number of additional handset alert attempts that will be made, before indicating an error on any messages in the queue.
   - **Retry Timeout:** Number of seconds since start of previous alert before re-alert attempt. A new message to a handset will pre-empt this.

- **Complete Timeout:** Number of seconds after a message has been read that it will automatically be deleted from the handsets message queue, and the message system status set to Complete.

7. Click the Save & Close button to save all changes and return to the previous screen.

5.8.3 System Operation

- When a message is sent to a handset, it may alert or play a sound depending on the gateway settings.
- The user will press the handsets “Messages” button where they will see the “TITAN Inbox”. The number in brackets after the TITAN Inbox refers to the number of unread messages.
- Once the user clicks the TITAN Inbox, they will see messages received by the handset.
- The icon next to each message shows whether a message is priority unread, unread, priority read or read. Messages are presented in this order first and if there are messages with the same status they are sorted by time received.
- By pressing the **READ** soft key the user will view the entire contents of the message. Depending on the gateway settings, the user will also have the ability to Callback, Escalate, Accept or Clear via the soft keys.

NOTE: The force escalate and clear alarm functionality can be enabled/disabled on an individual basis when creating or editing a recipient.

NOTE: The callback extension can be made up of the DTMF characters # and *. You can also use the , (comma) character to act as a 1 second pause.

- If the handset or user does not respond in a configured time by pressing the start key to read the message or if the handset if turned off, then the message will be marked as failed.

5.8.4 Sending a Message

1. Create a new contact. *Recipients -> Contacts -> Add New.*

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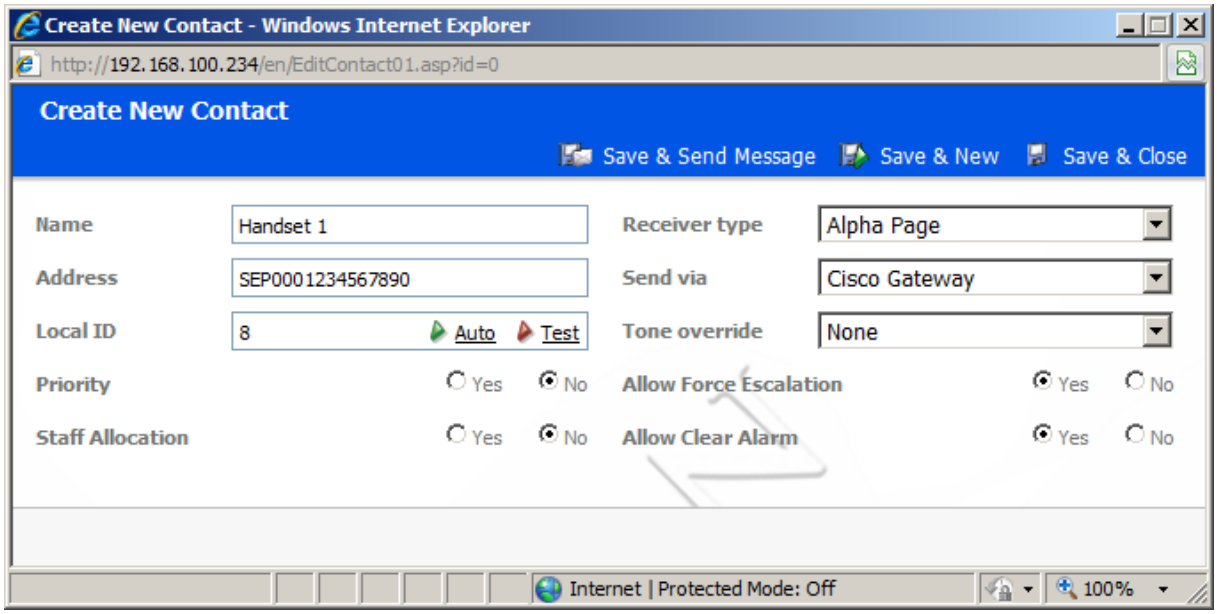
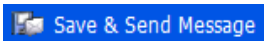


2. Give the contact a useful *Name*.
3. In the *Address* field enter the handset number of the handset for the person you wish to contact. The format is SEPxxxxxxxxxxx and it is not case sensitive.
4. Select the Cisco gateway in the *Send Via* drop down box.
5. Finally click the 

button. Type a test message and click *Send*. After a short time the message will appear on the handset.

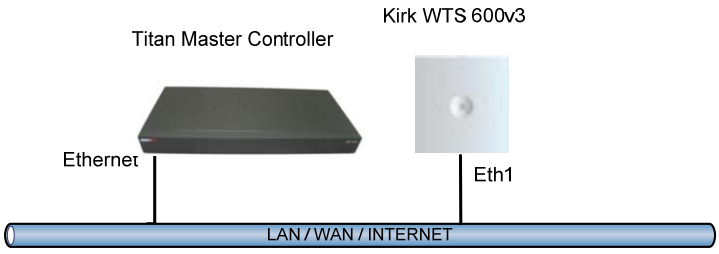
5.9 Messaging to Kirk Wireless Server 600v3 System

The Master Controller supports connection to Kirk 600v3 system making it possible to send messages to Kirk system handsets.

NOTE: For a list of supported Kirk Systems and supported handsets, see the Technical Specifications section of the Appendix.

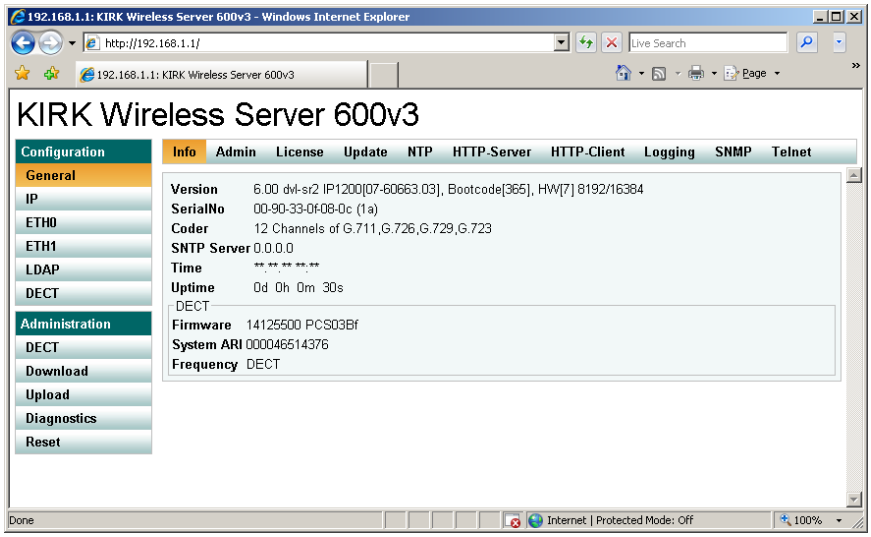
5.9.1 Setting up the System

1. The Master Controller unit will need to have a "Kirk 600/6000" license key installed. Contact your place of purchase for this type of license key.
2. The Kirk 600v3 unit needs some configuration before messaging will function. Connect the Eth1 port on the Kirk unit to your local network as shown below.



3. The default IP address of a KWS 600v3 system is 192.168.1.1 via the Eth1 port. The default password is user: admin, password: ip1200.
4. Attempt to browse to the Kirk system by typing the IP address of the unit. If the IP address is not known try 192.168.1.1 or 192.168.0.1. The PC you are trying to connect with will need to be on the same subnet as the Kirk system. If you do not know the IP address of the Kirk unit, you will need to reset the IP address back to default.

NOTE: To reset the IP address of a Kirk 600v3, hold the reset button down for about 5 seconds, then release. The settings will be defaulted with DHCP enabled. Then press the reset button again briefly to get it to change IP to 192.168.0.1



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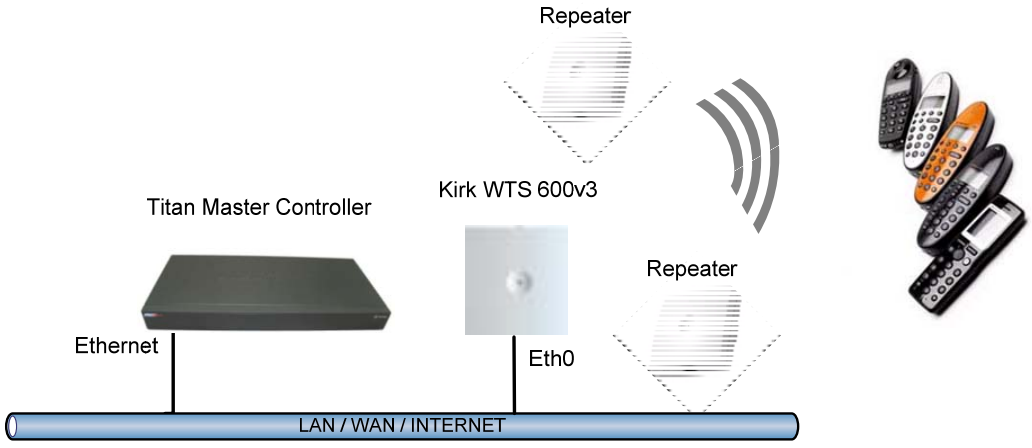
5. Once you can successfully browse to the web interface page, some special commands need to be executed on the KWS 600v3 unit to enable messaging.
    a. Open a web browser *(Replace 172.18.0.196 with the IP of your KWS 600v3 unit)*
    b. At the address bar enter: http://172.18.0.196/!config change TELNET0 /port 23
    c. At the address bar enter: http://172.18.0.196/!config write
    d. At the address bar enter: http://172.18.0.196/!reset

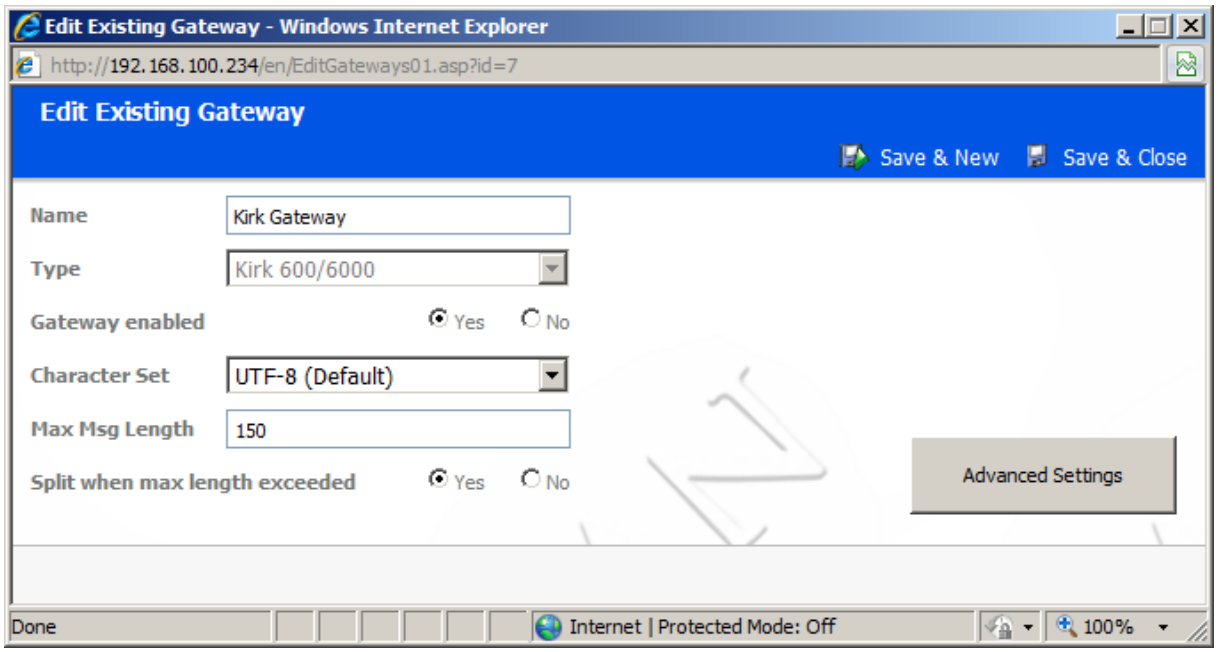
WARNING: The Kirk 600v3 unit must have the latest firmware version installed in order to operate reliably. Firmware can be downloaded from Kirk Polycom directly:
http://www.kirktelecom.com/Installer/suk198.asp

6. Configuration of the Kirk 600v3 unit is done via the Eth1 port, however later on we will be using the Eth0 port for messaging communication with the Master Controller. It is recommended to assign a static IP address to the Eth0 port, or setup the Ethernet MAC address in your DHCP server to assign a constant IP address to the unit. To setup the Kirk 600v3 with a static IP address, click *Eth0 -> DHCP* and change the *Mode* to be *Disabled*. Then click *Eth0 -> IP* and configure the static IP address settings. If you are a DHCP server instead, then click Eth0 -> DHCP and set the *Mode* to be *Client*.
7. Now configuration of the Kirk 600v3 unit is complete on the Eth1 port. Remove the network cable from Eth1 port and plug it into Eth0 port as shown below.



5.9.2 Master Controller Settings

1. First of all, a gateway will need to be created. Click *Interfaces -> Gateways*. To add a new gateway, click the Add New button and this screen will be shown.



2. Give the gateway a useful name and select *Kirk 600/6000* in the *Type* drop down box.
3. The *Character Set* field determines the character set used when sending Kirk messages. For more details on language support and code page settings contact your dealer or JTECH. If in doubt please use the default character set (UTF-8).
4. The *Max Msg Length* and *Split when max length exceeded* options are very useful to control long outgoing messages. The *Max Msg Length* setting is the maximum number of characters that an outgoing message will be limited to. (use 0 for unlimited).
5. Click the *Advanced Settings* button.

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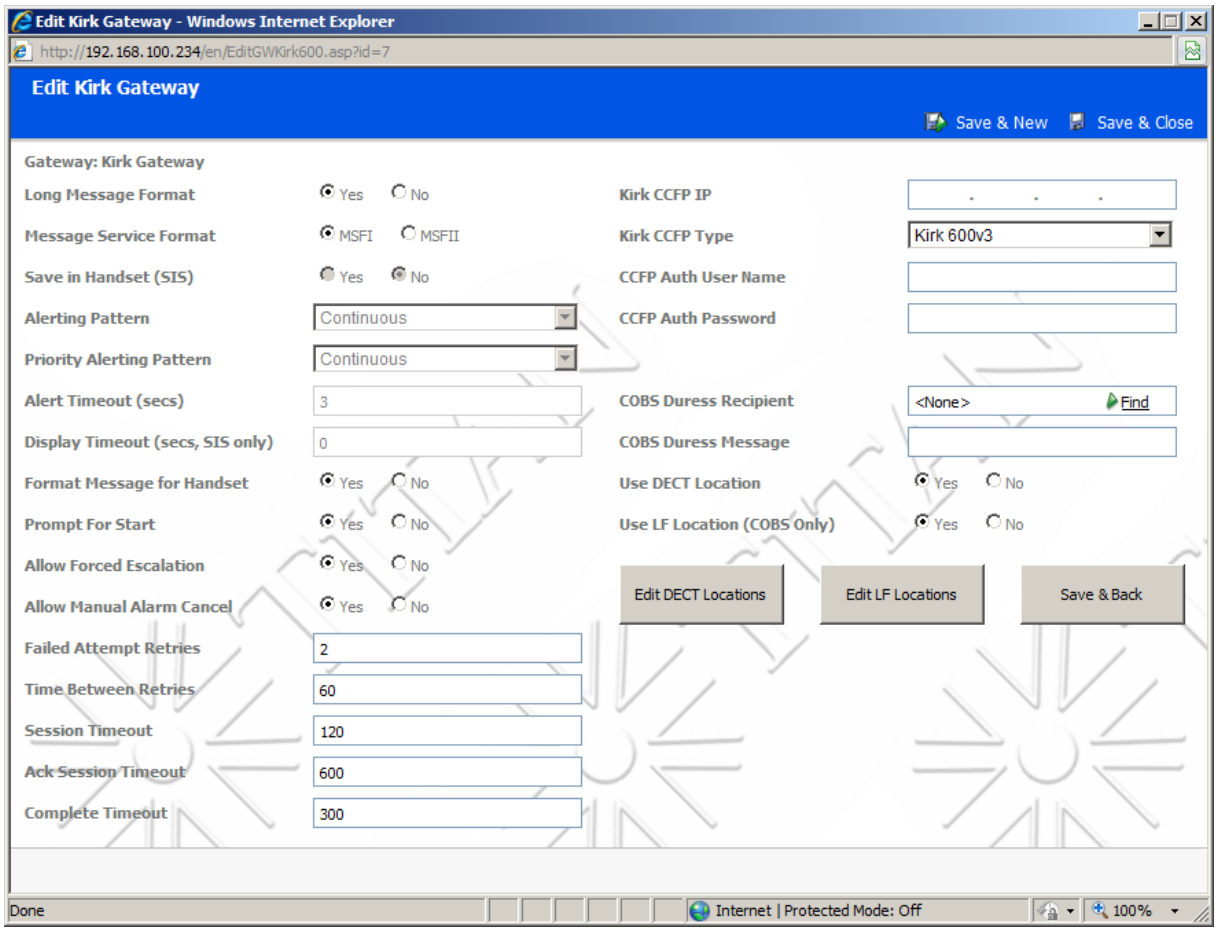

Long Message Format – The *Long Message Format* field sets the mode of operation of messaging to Kirk DECT handsets. When disabled, the message will be sent directly to the handset, but will be discarded if the handset receives another message or is used for a voice call. When enabled, handsets will be alerted with a new message notification, and may then scroll through the message. No further messages will be received until this message is cleared from the handset. When the *Long message* option is set to *Yes*, extended functionality is available:

- If the string **"Ext:xxx"** is found in the message text, the phone number field is set in the message sent to the handset, with the xxx being the phone number. This means that the user simply needs to press the dial key and this phone number or extension will be dialed (see below).

NOTE: The extension can be made up of the DTMF characters # and *. You can also use the , character to act as a one second pause.

- When a message is sent to the Kirk handset, the user is prompted with *"New Message Press Tick"*.
- User presses **tick**. A session (MSF) is established with the handset, and the first page of the message is sent to the handset (If the message is longer than can display on the screen).

- If handset or user does not respond in time (by pressing the **tick** key to read the message) or is out of range, then the message is marked as failed.
- After pressing the tick key, the user can scroll through the message.
- **Press key '1'** to acknowledge the call is being handled. Message is marked as *Acknowledged & Read*.
- **Press key '2'** to cancel the alarm that generated this message. If there was no alarm then key input is ignored. Message is marked as Read if not already.

❖ **NOTE: This functionality can be enabled/disabled on a per recipient basis or globally in the Kirk Gateway Advanced settings section.**

- **Press key '3'** to immediately force escalate to the next recipient in the escalation. If there is no escalation or if forced escalation is not allowed, nothing happens.

❖ **NOTE: This functionality can be enabled/disabled on a per recipient basis or globally in the Kirk Gateway Advanced settings section.**

- **Press Dial** to dial the call-back number that was embedded in the message with the string **Ext:xxx**.

Message Service Format – The *MSF II* option enables tones that are available with newer Kirk DECT handsets and base stations. For older Kirk products this must be set to *MSF I*.

MSF I	
Tone ID	**Description**
A / I	Pattern 2 (Tone 9 in PP)
B / J	Pattern 3 (Tone 6 in PP)
C / K	Pattern 4 (Tone 7 in PP)
D / L	Pattern 5 (KeyBeep in PP)
E / M	Pattern 6 (KeyClick in PP)
F / N	Pattern 7 (Accept Tone in PP)
G / O	Vibrate
H / P	Silence

MSF II	
Tone ID	**Description**
A	Tone 1 in PP
B	Tone 2 in PP
C	Tone 3 in PP
D	Tone 4 in PP
E	Tone 5 in PP
F	Tone 6 in PP
G	Tone 7 in PP
H	Tone 8 in PP
I	Tone 9 in PP
J	Vibrate/Tone 1 in PP
K	Vibrate/Tone 2 in PP
L	Vibrate/Tone 3 in PP
M	Vibrate/Tone 9 in PP
N	Vibrate Tone in PP
O	Use Tone Preset in PP
P	Press Tick to Stop Alert

Save in Handset (SIS) – Setting this field to *Yes* will allow short messages to be stored in the handset for later retrieval via the Kirk Inbox.

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Alerting Pattern – If *MSFII* is selected, the alert pattern for messages can be adjusted between *Continuous, Internal, External* and *Alarm*.

Priority Alerting Pattern – If *MSFII* is selected, the alert pattern for priority messages can be adjusted between *Continuous, Internal, External* and *Alarm*.

Alert Timeout (secs) – This option is only active when MSFII used and will only have effect if Beep Tones A - O are used. It allows you to adjust the length of the alert when a message is received by the handset, between 1 - 255 seconds.

Display Timeout (secs, SIS only) – This will determine how long the message will be displayed on the handset screen before reverting back to normal. This option is only valid if SIS is checked.

Format Message For Handset – This field prevents words from being split across multiple lines on the 30xx and 40xx Kirk handsets. Setting this field to *Yes* will optimize word wrapping for a 12 x 3 display, keeping whole words intact and using spaces to optimize word positioning. This option should be set to *No* if you are using 50xx Kirk handsets as those handsets provide their own word wrapping local to the handset.

NOTE: When word wrapping is turned on, the message number and "]" character are not displayed at the beginning of the message.

Prompt for Start – If this field is set to *Yes*, when the message receives a message it will prompt to press the Start or Tick button to show the message. Otherwise it will just show the message.

Allow Forced Escalation – As discussed above in the *Long Message Format* section, the Kirk phone user has the ability to force escalate using keys on the handset. The functionality can be enabled or disabled using this field. This setting applied to all messages coming into the Kirk gateway and would override all individual contact settings if set to *No*.

Allow Manual Alarm Control – As discussed above in the *Long Message Format* section, the Kirk phone user has the ability to clear alarms using keys on the handset. The functionality can be enabled or disabled using this field. This setting applied to all messages coming into the Kirk gateway and would override all individual contact settings if set to *No*.

Failed Attempt Retries – This refers to the number of times the Master Controller will attempt to send the message to the handset before indicating the message as failed.

Time Between Retries – The time (seconds) between retries.

Session Timeout – When viewing messages, this field refers to the time (seconds) the Master Controller will wait for a key press before timing out.

Ack Session Timeout – The number of seconds to wait for a key press while handset is in an MSF session and user has acknowledged the message by pressing 2 or 3. Session will be terminated by the application. Handset will return to standby.

Complete Timeout – Number of seconds after a message has been read that it will automatically deleted from the handsets message queue. And the message system status set to Complete. This only occurs if handset is not displaying messages (standby).

Kirk CCFP IP – Enter the IP Address of the KWS 600v3 system here.

Kirk CCFP Type – Choose *Kirk 600v3* in this field. If you had a Kirk 6000 system you would choose *Kirk 6000* here instead. Essentially the interfaces are the same except the Kirk 6000 uses a different port (56003 as opposed to 23).

CCFP Auth User Name – Enter the *User Name* for the KWS 600v3 system in this field. These are the same login details as used to login to the KWS 600v3 web configuration interface. (default username "admin")

CCFP Auth Password – Enter the *Password* for the KWS 600v3 system in this field. These are the same login details as used to login to the KWS 600v3 web configuration interface. (default password "ip1200")

COBS Duress Recipient – The KWS 600v3 system is compatible with the duress button on the 4000 series handsets. When this button is pressed a message can be generated and sent to the contact setup in the *Recipient* field

COBS Duress Message – The text in the *Message* field will be appended to the handset name. For example let's assume a user "Bob" has been setup to receive all duress messages and the word "Panic" has been entered into the *Message* field. When the duress button is pressed on Kirk handset 12, Bob will receive the message "Handset 12: Panic".

Use DECT Location – This feature applies to 4040 handsets only. When the alarm button is pressed on the top of the 4040 handsets, they send the location of their 5 closest base stations with the alarm duress information. The ID of the base stations can be looked up to enhance messages generated from these alarms. (See the *Edit DECT Locations* option below)

Use LF Location (COBS only) – This feature applies to COBS handsets only. When an alarm is generated on the COBS handsets (alarm button, tilt sensor, pull cord), they send through their RF location and the alarm type. The ID of the LF beacons can be looked up to enhance messages generated from these alarms. (See the *Edit LF Locations* option below)

Edit DECT Locations – This option allows configuration of the DECT base station lookup table to provide descriptions for each beacon. This interface shall support 20 beacons (00 - 19) each with a maximum of 20 characters.

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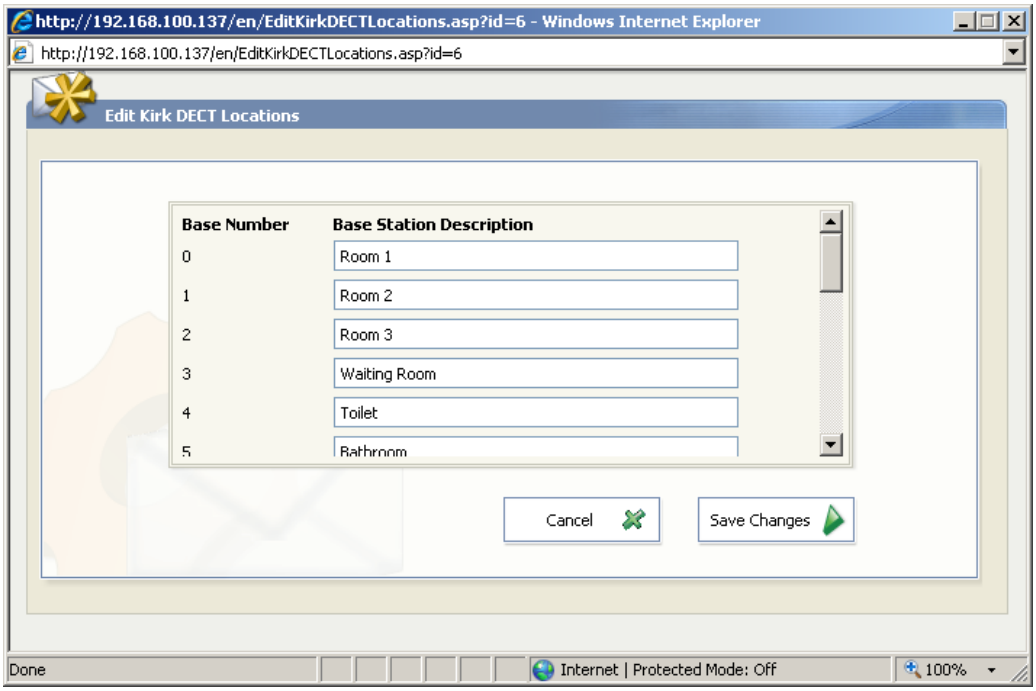
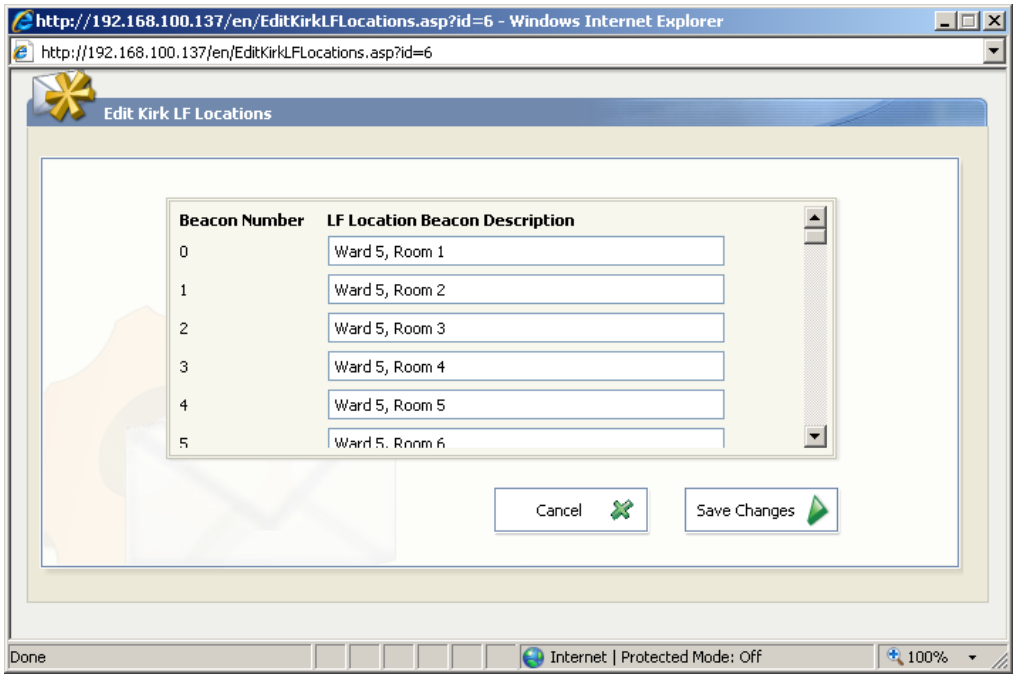


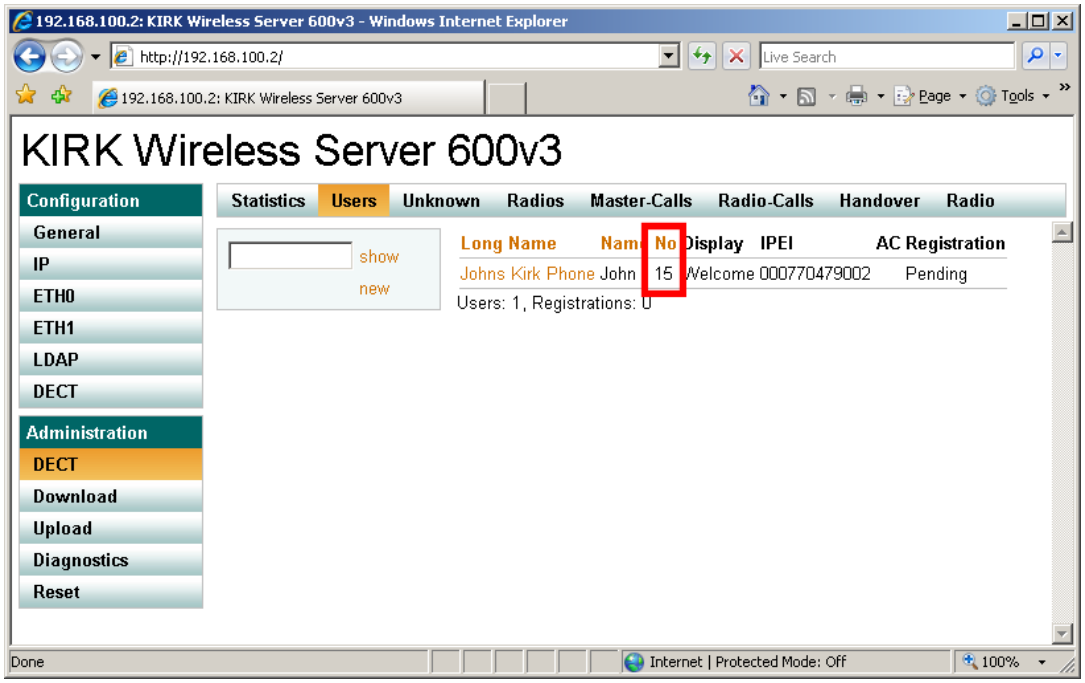
Edit LF Locations – This option allows the editing of the LF Location lookup table to provide descriptions for each beacon. This interface shall support 1025 beacons (0000 - 1024) each with a maximum of 20 characters. The button shall be disabled if the Edit LF Location configuration is turned off.



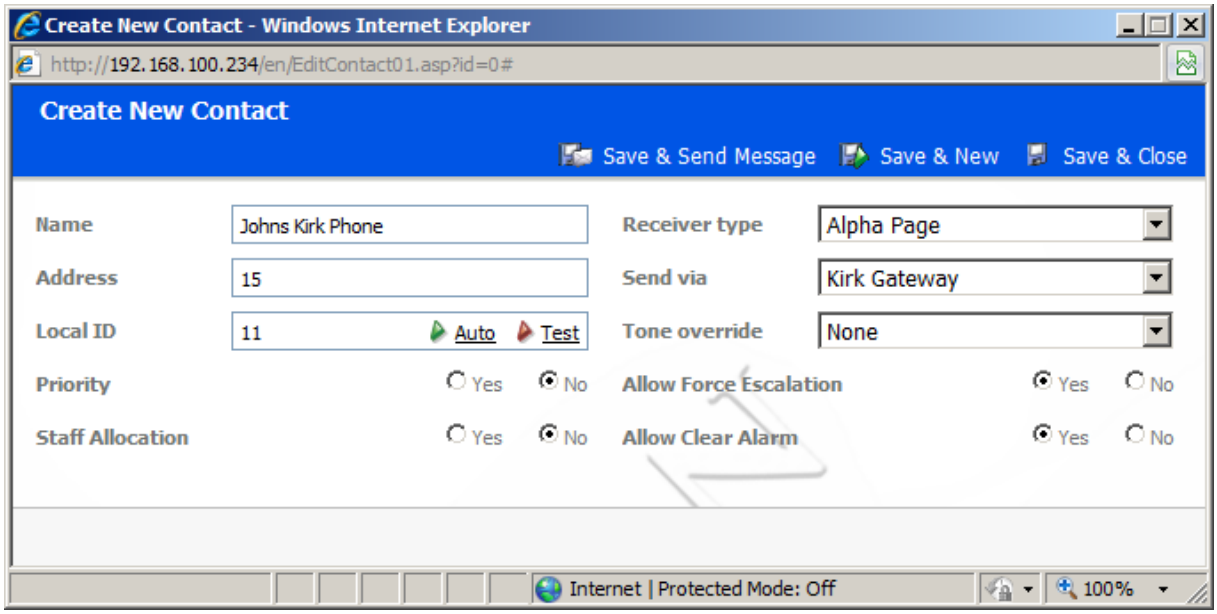
6. Click the Save & Close button to save all changes and return to the previous screen.

5.9.3 Sending a Message

1. Ensure all handsets are registered and logged onto the Kirk 600v3 system. This process is normally done by the Kirk system administrator. Each user setup in the Kirk system has a "number" assigned.
2. This number can be viewed in the Kirk web interface. Open your web browser and type the IP address that you configured for Eth0 previously. Under the *Administration menu*, click *Dect -> Users -> Show* and the following screen will be shown.



3. For example the number for *Johns Phone* is 15.
4. Create a new contact. *Recipients -> Contacts -> Add New.*



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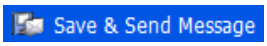
5. Give the contact a useful *Name*.
6. In the *Address* field enter the handset number for the person you wish to contact. In the example above you would type “15” here.
7. Select the Kirk gateway in the *Send Via* drop down box.
8. Finally click the 

button. Type a test message and click *Send*. After a short time the message will appear on the handset.

5.10 Messaging to Kirk 500 and 1500 Systems

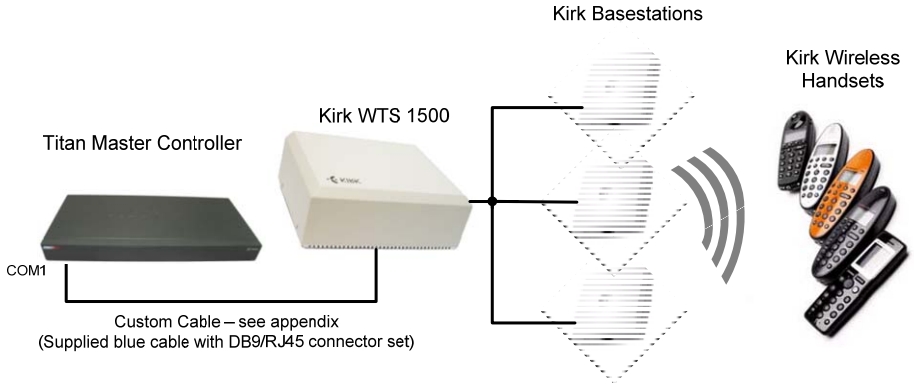
The Master Controller supports connection to the Kirk WTS 500 and WTS 1500 systems making it possible to send messages to Kirk DECT system handsets.

NOTE: For a list of supported Kirk Systems and supported handsets, see the Technical Specifications section of the Appendix.

5.10.1 Setting up the System

1. The Master Controller unit will need to have a "Kirk 500/1500" license key installed. Contact your place of purchase for this type of license key.
2. The Kirk system and Master Controller need to be connected together in order to communicate. This depends on the type of Kirk system being used

    a. **Kirk WTS 1500** - Use a straight through RJ45-RJ45 cable such as the supplied blue cable in conjunction with a Kirk connector set (available from JTECH). Alternatively you can make a custom serial cable using the pin outs from the appendix in this manual. Connect from a Com port on the TITAN Master Controller to the Com port on the WTS 1500 system.



    b. **Kirk WTS 500** – A custom made serial cable needs to be created for this purpose. See the appendix in this manual for pin out information. Connect from a Com port on the TITAN Master Controller to the Com port on the WTS 500 system.

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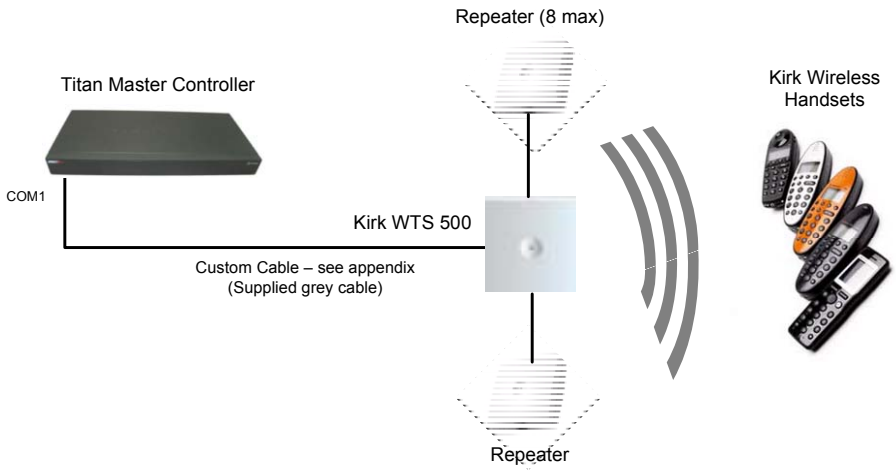
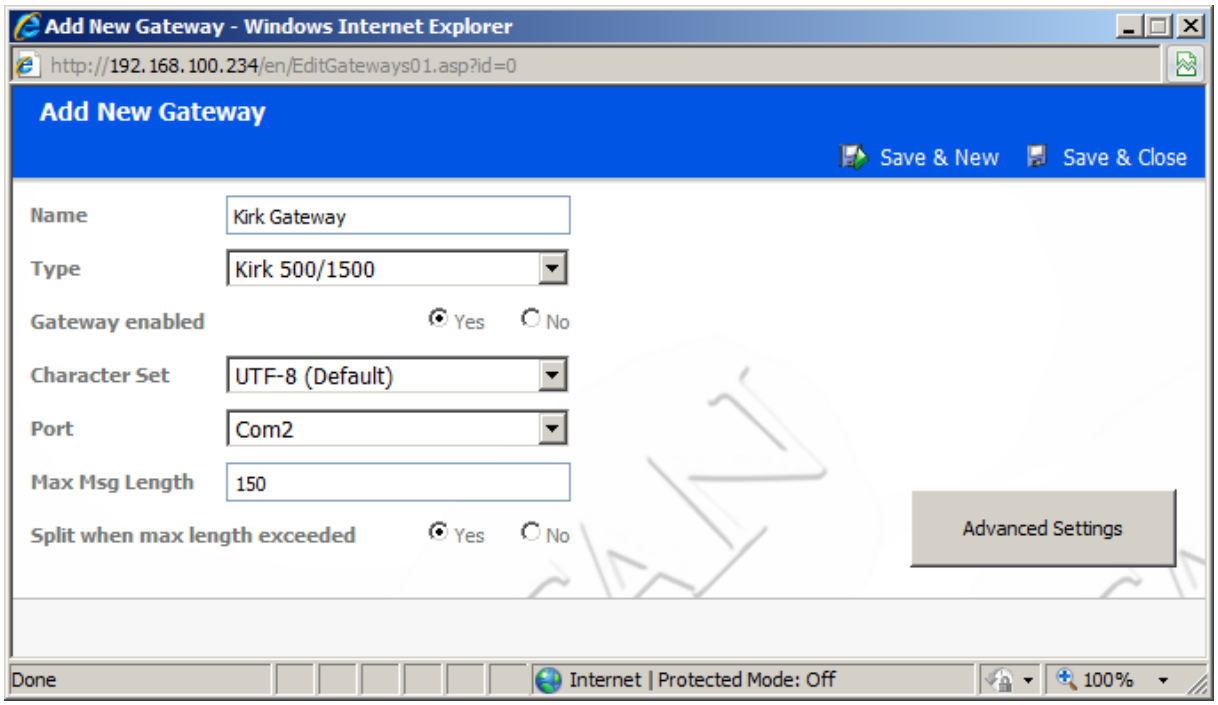


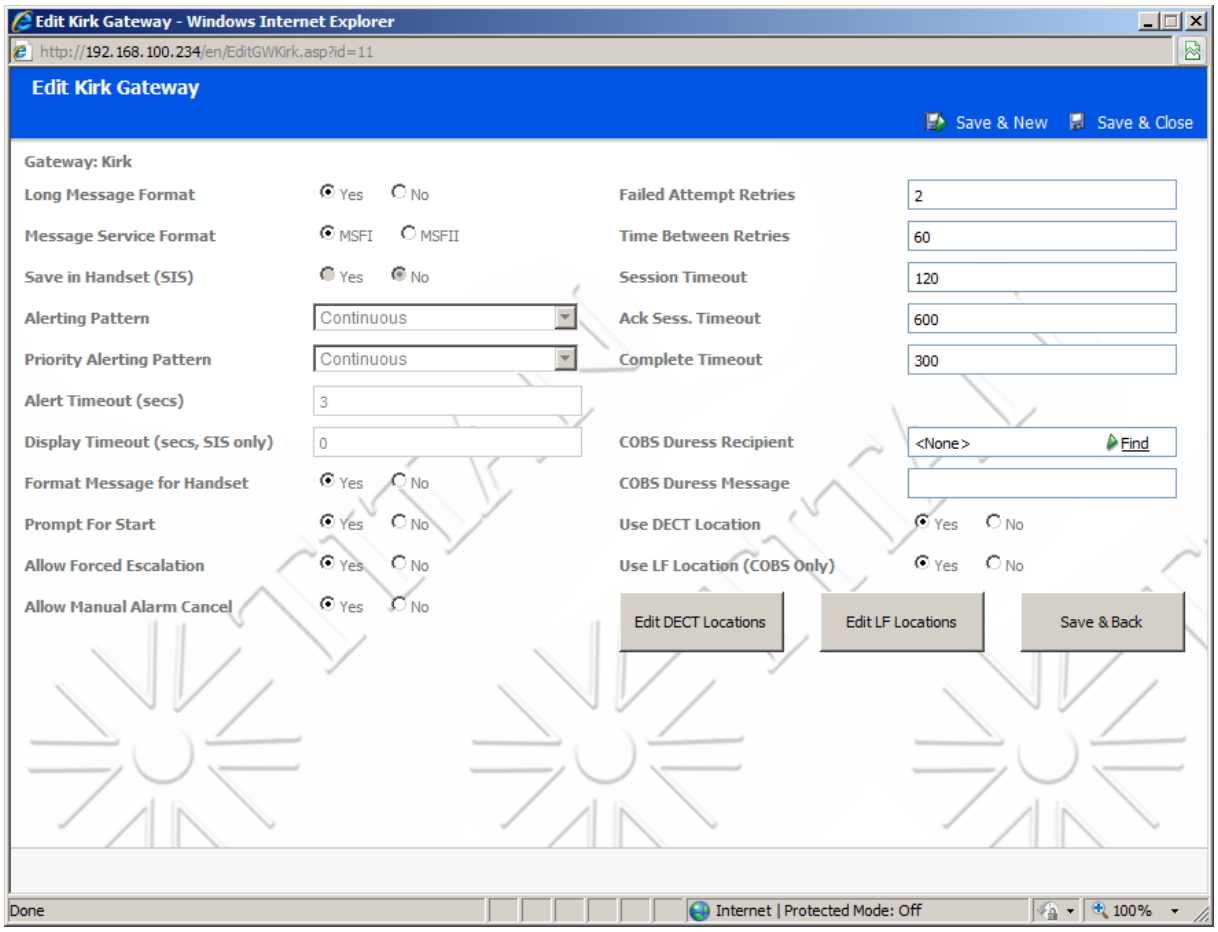
5.10.2 Master Controller Settings

1. First of all, a gateway will need to be created. Click *Interfaces -> Gateways*. To add a new gateway, click the Add New button and this screen will be shown.



2. Give the gateway a useful name and select *Kirk 500/1500* in the *Type* drop down box.
3. The *Character Set* field determines the character set used when sending Kirk messages. For more details on language support and code page settings contact your dealer or JTECH. If in doubt please use the default character set (UTF-8).

4. Master Controller needs to know which *Port* it will be using for communication. Using the drop down box, select the *Com* port the Kirk unit is connected to.
5. The *Max Msg Length* and *Split when max length exceeded* options are very useful to control long outgoing messages. The *Max Msg Length* setting is the maximum number of characters that an outgoing message will be limited to. (use 0 for unlimited).
6. Click the *Advanced Settings* button.



Long Message Format – The *Long Message Format* field sets the mode of operation of messaging to Kirk DECT handsets. When disabled, the message will be sent directly to the handset, but will be discarded if the handset receives another message or is used for a voice call. When enabled, handsets will be alerted with a new message notification, and may then scroll through the message. No further messages will be received until this message is cleared from the handset. When the *Long message* option is set to *Yes*, extended functionality is available:

- If the string **"Ext:xxx"** is found in the message text, the phone number field is set in the message sent to the handset, with the xxx being the phone number. This means that the user simply needs to press the dial key and this phone number or extension will be dialed (see below).

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❖ **NOTE: The extension can be made up of the DTMF characters # and *. You can also use the , character to act as a one second pause.**

- When a message is sent to the Kirk handset, the user is prompted with *"New Message Press Tick"*.
- User presses **tick**. A session (MSF) is established with the handset, and the first page of the message is sent to the handset (If the message is longer than can display on the screen).
- If handset or user does not respond in time (by pressing the **tick** key to read the message) or is out of range, then the message is marked as failed.
- After pressing the tick key, the user can scroll through the message.
- **Press key '1'** to acknowledge the call is being handled. Message is marked as *Acknowledged & Read*.
- **Press key '2'** to cancel the alarm that generated this message. If there was no alarm then key input is ignored. Message is marked as Read if not already.

❖ **NOTE: This functionality can be enabled/disabled on a per recipient basis or globally in the Kirk Gateway Advanced settings section.**

- **Press key '3'** to immediately force escalate to the next recipient in the escalation. If there is no escalation or if forced escalation is not allowed, nothing happens.

❖ **NOTE: This functionality can be enabled/disabled on a per recipient basis or globally in the Kirk Gateway Advanced settings section.**

- **Press Dial** to dial the call-back number that was embedded in the message with the string **Ext:xxx**.

Message Service Format – The *MSF II* option enables tones that are available with newer Kirk DECT handsets and base stations. For older Kirk products this must be set to *MSF I*.

MSF I	
Tone ID	**Description**
A / I	Pattern 2 (Tone 9 in PP)
B / J	Pattern 3 (Tone 6 in PP)
C / K	Pattern 4 (Tone 7 in PP)
D / L	Pattern 5 (KeyBeep in PP)
E / M	Pattern 6 (KeyClick in PP)
F / N	Pattern 7 (Accept Tone in PP)
G / O	Vibrate
H / P	Silence

MSF II	
Tone ID	**Description**
A	Tone 1 in PP
B	Tone 2 in PP
C	Tone 3 in PP
D	Tone 4 in PP
E	Tone 5 in PP
F	Tone 6 in PP
G	Tone 7 in PP
H	Tone 8 in PP
I	Tone 9 in PP
J	Vibrate/Tone 1 in PP
K	Vibrate/Tone 2 in PP
L	Vibrate/Tone 3 in PP
M	Vibrate/Tone 9 in PP
N	Vibrate Tone in PP
O	Use Tone Preset in PP
P	Press Tick to Stop Alert

Save in Handset (SIS) – Setting this field to *Yes* will allow short messages to be stored in the handset for later retrieval via the Kirk Inbox.

Alerting Pattern – If *MSFII* is selected, the alert pattern for messages can be adjusted between *Continuous, Internal, External* and *Alarm*.

Priority Alerting Pattern – If *MSFII* is selected, the alert pattern for priority messages can be adjusted between *Continuous, Internal, External* and *Alarm*.

Alert Timeout (secs) – This option is only active when MSFII used and will only have effect if Beep Tones A - O are used. It allows you to adjust the length of the alert when a message is received by the handset, between 1 - 255 seconds.

Display Timeout (secs, SIS only) – This will determine how long the message will be displayed on the handset screen before reverting back to normal. This option is only valid if SIS is checked.

Format Message For Handset – This field prevents words from being split across multiple lines on the 30xx and 40xx Kirk handsets. Setting this field to *Yes* will optimize word wrapping for a 12 x 3 display, keeping whole words intact and using spaces to optimize word positioning. This option should be set to *No* if you are using 50xx Kirk handsets as those handsets provide their own word wrapping local to the handset.

NOTE: When word wrapping is turned on, the message number and "]" character are not displayed at the beginning of the message.

Prompt for Start – If this field is set to *Yes*, when the message receives a message it will prompt to press the Start or Tick button to show the message. Otherwise it will just show the message.

Allow Forced Escalation – As discussed above in the *Long Message Format* section, the Kirk phone user has the ability to force escalate using keys on the handset. The functionality can be enabled or

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disabled using this field. This setting applied to all messages coming into the Kirk gateway and would override all individual contact settings if set to *No*.

Allow Manual Alarm Control – As discussed above in the *Long Message Format* section, the Kirk phone user has the ability to clear alarms using keys on the handset. The functionality can be enabled or disabled using this field. This setting applied to all messages coming into the Kirk gateway and would override all individual contact settings if set to *No*.

Failed Attempt Retries – This refers to the number of times the Master Controller will attempt to send the message to the handset before indicating the message as failed.

Time Between Retries – The time (seconds) between retries.

Session Timeout – When viewing messages, this field refers to the time (seconds) the Master Controller will wait for a key press before timing out.

Ack Session Timeout – The number of seconds to wait for a key press while handset is in an MSF session and user has acknowledged the message by pressing 2 or 3. Session will be terminated by the application. Handset will return to standby.

Complete Timeout – Number of seconds after a message has been read that it will automatically deleted from the handsets message queue. And the message system status set to Complete. This only occurs if handset is not displaying messages (standby).

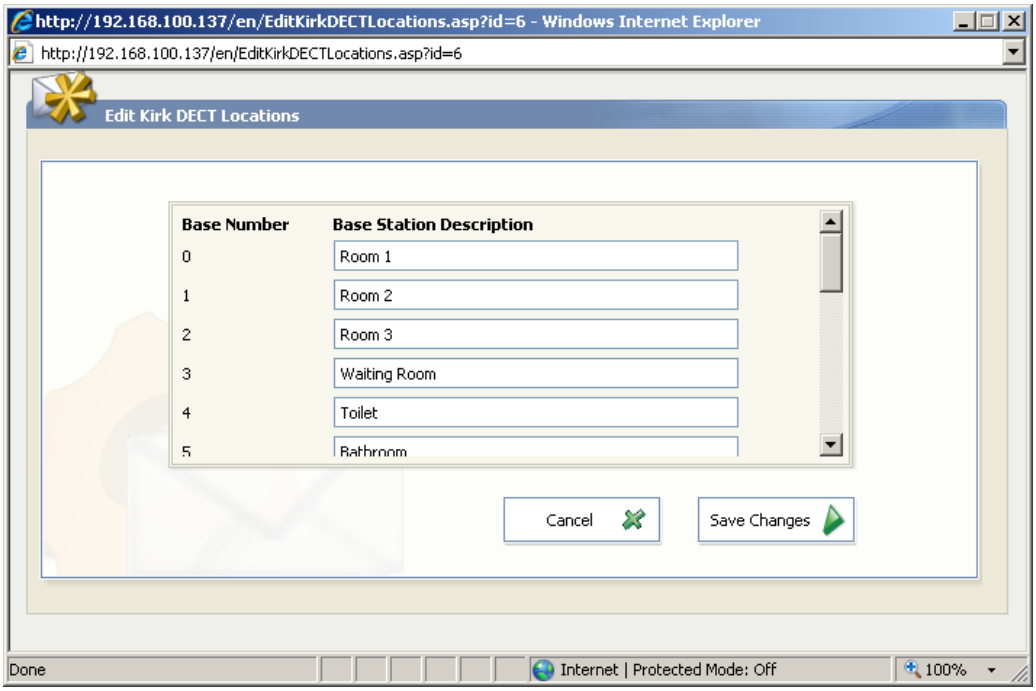
COBS Duress Recipient – The KWS 600v3 system is compatible with the duress button on the 4000 series handsets. When this button is pressed a message can be generated and sent to the contact setup in the *Recipient* field

COBS Duress Message – The text in the *Message* field will be appended to the handset name. For example let's assume a user "Bob" has been setup to receive all duress messages and the word "Panic" has been entered into the *Message* field. When the duress button is pressed on Kirk handset 12, Bob will receive the message "Handset 12: Panic".

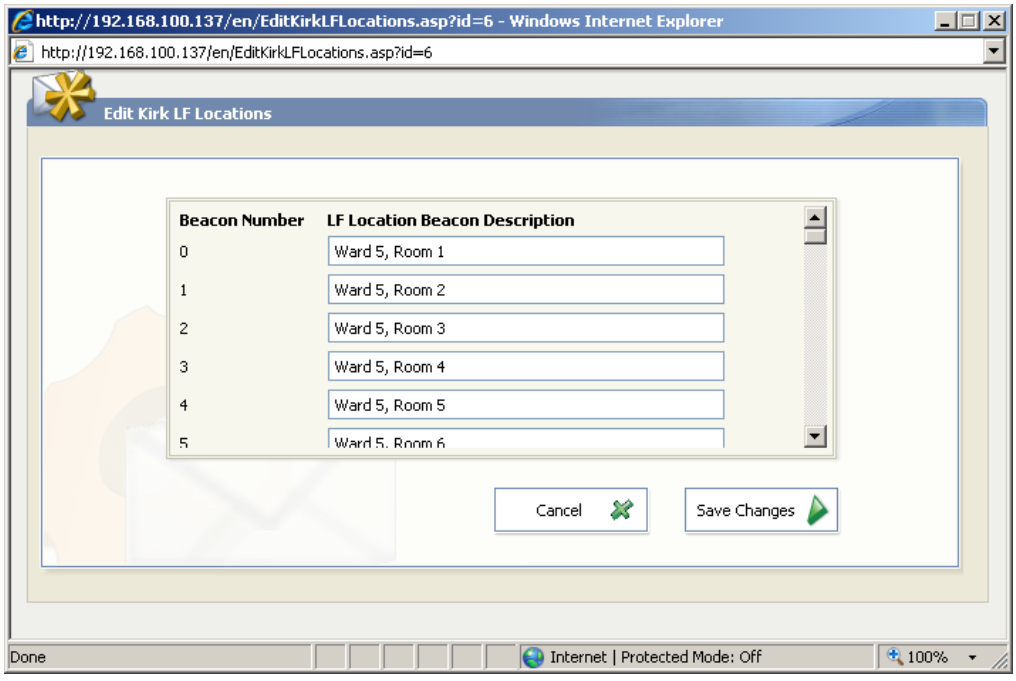
Use DECT Location – This feature applies to 4040 handsets only. When the alarm button is pressed on the top of the 4040 handsets, they send the location of their 5 closest base stations with the alarm duress information. The ID of the base stations can be looked up to enhance messages generated from these alarms. (See the *Edit DECT Locations* option below)

Use LF Location (COBS only) – This feature applies to COBS handsets only. When an alarm is generated on the COBS handsets (alarm button, tilt sensor, pull cord), they send through their RF location and the alarm type. The ID of the LF beacons can be looked up to enhance messages generated from these alarms. (See the *Edit LF Locations* option below)

Edit DECT Locations – This option allows configuration of the DECT base station lookup table to provide descriptions for each beacon. This interface shall support 20 beacons (00 - 19) each with a maximum of 20 characters.



Edit LF Locations – This option allows the editing of the LF Location lookup table to provide descriptions for each beacon. This interface shall support 1025 beacons (0000 - 1024) each with a maximum of 20 characters. The button shall be disabled if the Edit LF Location configuration is turned off.



7. Click the Save & Close button to save all changes and return to the previous screen.

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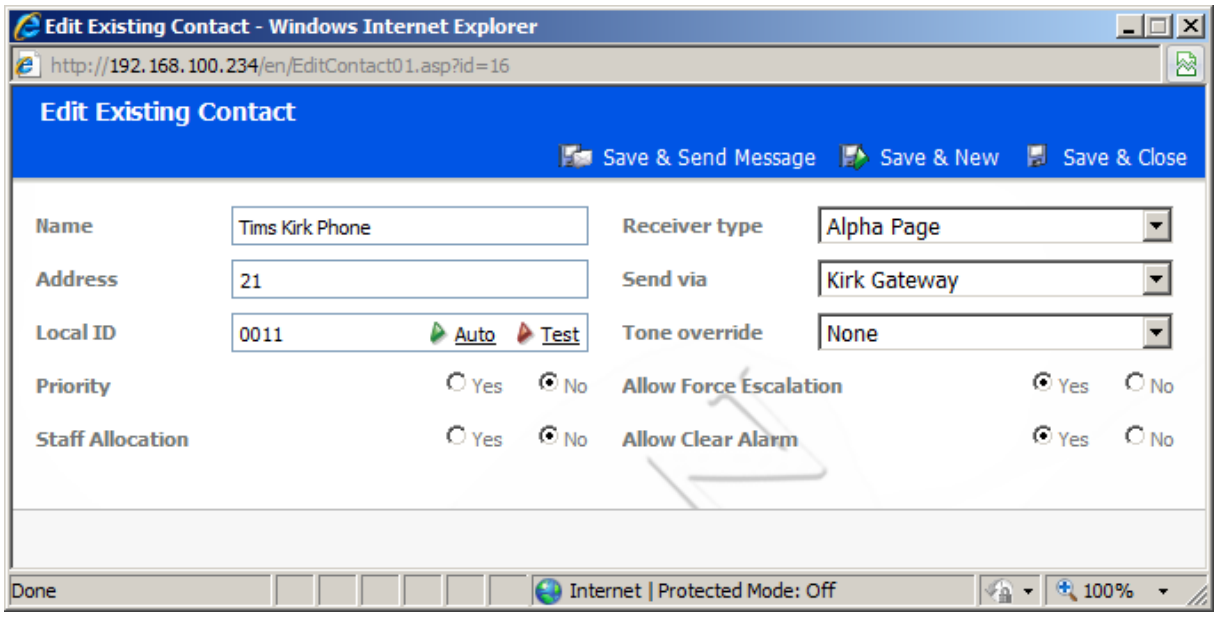
5.10.3 Sending a Message

1. Ensure all handsets are registered and logged onto the Kirk 500/1500 system. This process is normally done by the Kirk system administrator. Each user setup in the Kirk system has a "number" assigned.
2. This number can be viewed in the Kirk configuration software. For example the number for *Tims Phone* is 21.
3. Create a new contact. *Recipients -> Contacts -> Add New.*



4. Give the contact a useful *Name*.
5. In the *Address* field enter the handset number for the person you wish to contact. In the example above you would type "21" here.
6. Select the Kirk gateway in the *Send Via* drop down box.
7. Finally click the Save & Send Message button. Type a test message and click *Send*. After a short time the message will appear on the handset.

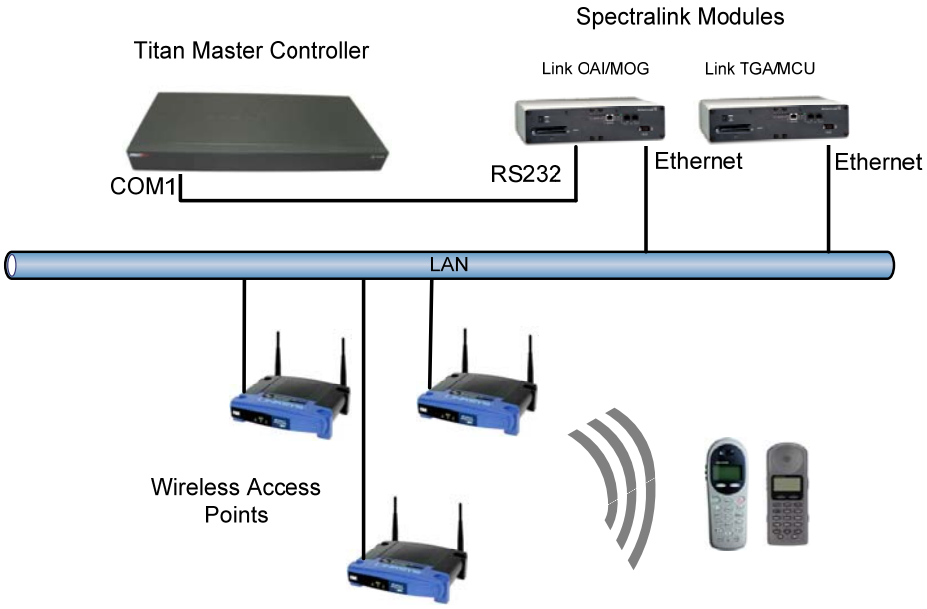
5.11 Messaging to Spectralink Handsets

The Master Controller supports connection to Spectralink systems making it possible to send messages to Spectralink system handsets.

NOTE: For a list of supported Spectralink Systems and supported handsets, see the Technical Specifications section of the Appendix.

5.11.1 Setting up the System

1. The Master Controller unit will need to have a "Spectralink" license key installed. Contact your place of purchase for this type of license key.
2. The Spectralink system and Master Controller need to be connected together in order to communicate. This depends on how you wish to setup the system. Both methods offer the same functionality.
    a. **Using RS232 Connection** - Use a straight through RJ45-RJ45 cable such as the supplied blue cable in conjunction with a Spectralink connector set (available from JTECH). Alternatively you can make a custom serial cable using the pin outs from the appendix in this manual. Connect from Com1 on the TITAN Master Controller to the Com port on the Spectralink OAI module.



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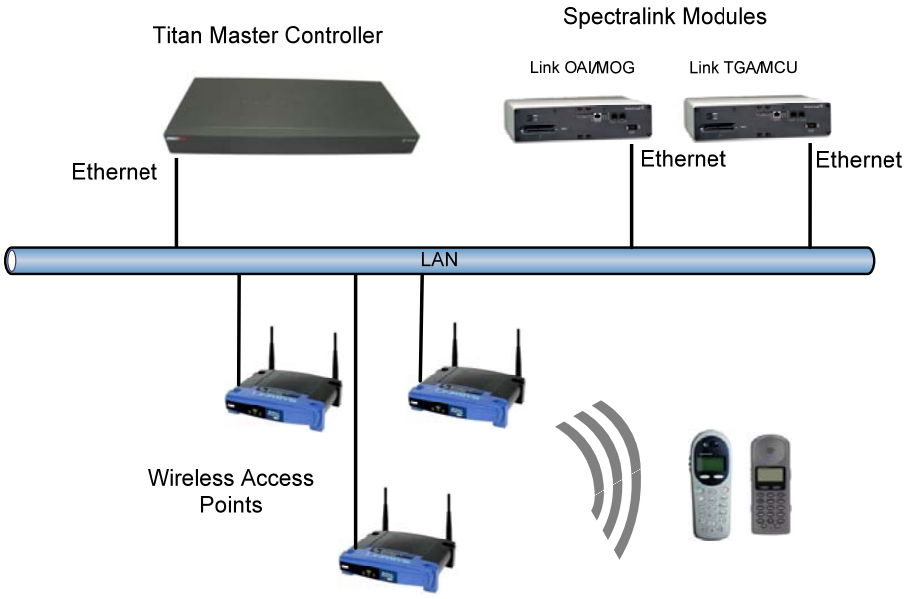
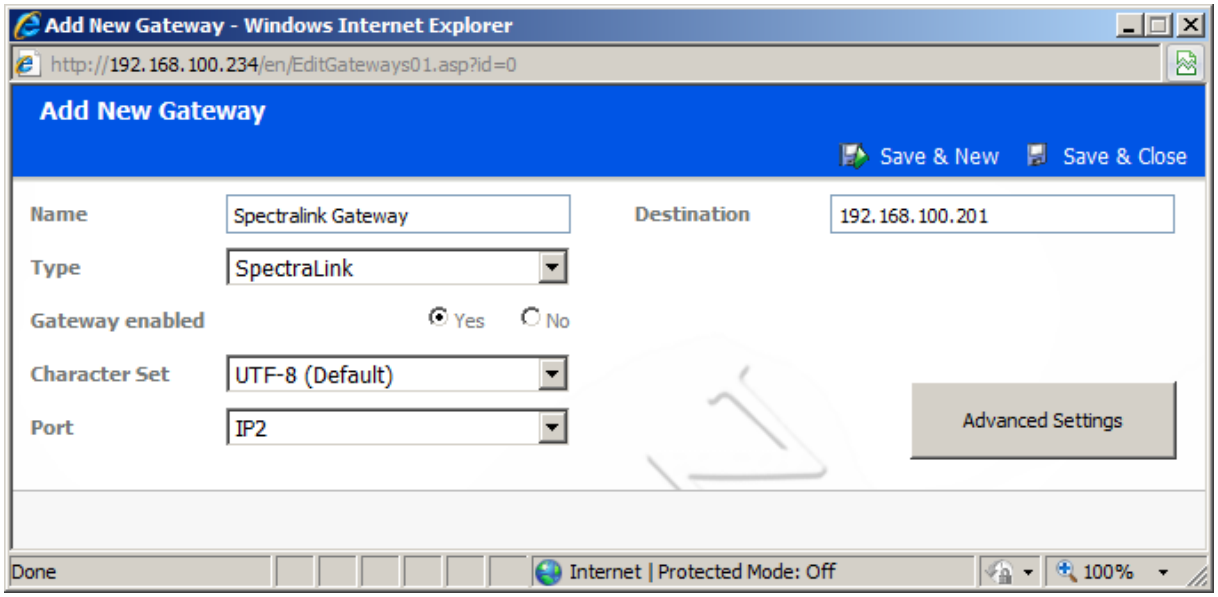
b. **Using Ethernet Connection** – Simply ensure that the Master Controller is on the same network as the Spectralink equipment.

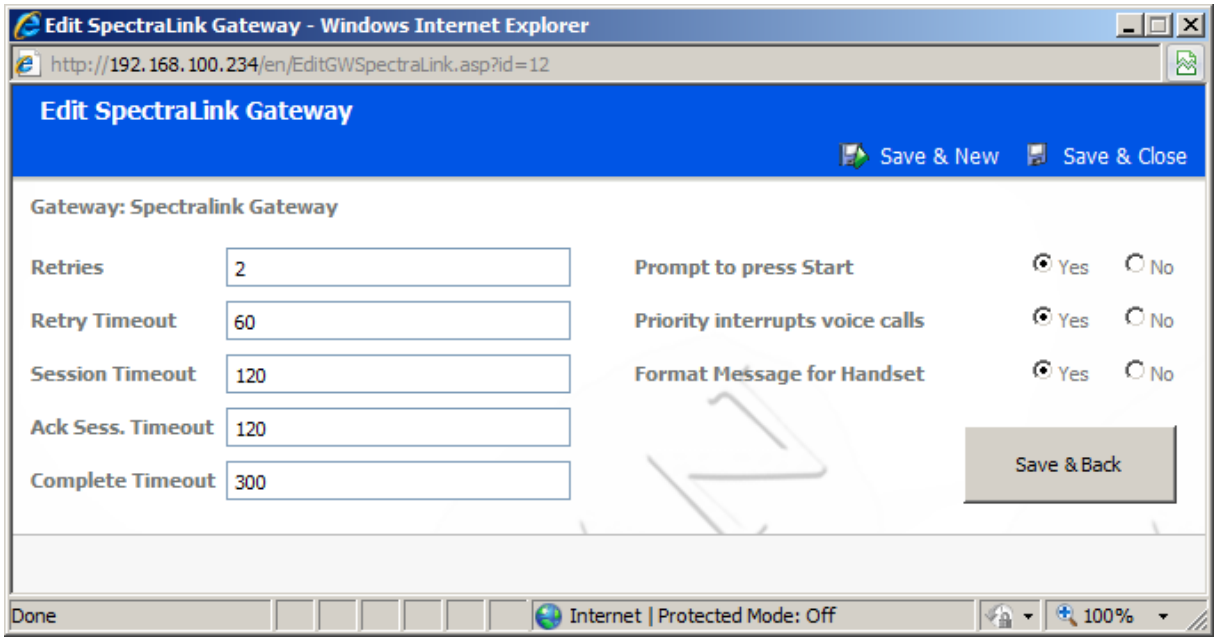


5.11.2 Master Controller Settings

1. A *Port* does not need to be configured in this example. Upon creation of the gateway, the Master Controller will set the *Port* with the correct settings.
2. A gateway will need to be created. Click *Interfaces -> Gateways*. To add a new gateway, click the Add New button and this screen will be shown.



3. Give the gateway a useful name and select *Spectralink* in the *Type* drop down box.
4. The *Character Set* field determines the character set used when sending Spectralink messages. For more details on language support and code page settings contact your dealer or JTECH. If in doubt please use the default character set (UTF-8).
5. Master Controller needs to know which *Port* it will be using for communication. Using the drop down box, select the *Com* or *IP* port depending on how the system has been set up. If you choose IP, an extra field is visible named "Destination" where the IP address of the Spectralink OAI system must be entered.
6. Click the *Advanced Settings* button.



7. There are number of fields which can be customized on this page. There functions are as follows:

Retries – This refers to the number of times the Master Controller will attempt to send the message to the handset before indicating the message as failed.

Retry Timeout – The time (seconds) between retries.

Session Timeout – When viewing messages, this field refers to the time (seconds) the Master Controller will wait for a key press before timing out.

Ack Sess. Timeout – The number of seconds to wait for a key press while handset is in an OAI session and user has Acknowledged the message by pressing 2 or 3. Session will be terminated by the application. Handset will return to standby.

Complete Timeout – Number of seconds after a message has been read that it will automatically deleted from the handsets message queue. And the message system status set to Complete. This only occurs if handset is not displaying messages (standby).

Prompt to press Start – If this field is set to *Yes*, when the message receives a message it will prompt to press the Start or Tick button to show the message. Otherwise it will just show the message.

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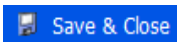
Priority interrupts voice calls – If the handset receives a priority message and this field is set to *Yes*, the handset will alert that there is a message even if the user is currently in a voice call. After being alerted the user will need to press FCN + 8 on the handset to enter OAI mode.

Format Message for Handset – This field prevents words from being split across multiple lines on a handset. Setting this field to *Yes* will optimized word wrapping for a 16 x 2 display (e.g. the 6020 handsets).

8. Click the 

button to save all changes and return to the previous screen.

5.11.3 System Operation

- If handset responds to the alert, the user is prompted with “New Message Press Start”. (The message)
- After the user presses Start, an OAI session is established and the first page of message is sent to the handset. User can scroll through the message (if message is larger than one screen).
- If the handset or user does not respond in a configured time by pressing the start key to read the message or if the handset if turned off, then the message will be marked as failed.

NOTE: The handset will store up to 9 messages in the queue at any one time. The order of messages is shown by the numbers across the top of the screen.

- If the string **"Ext:xxx"** is found in the message text, the phone number is saved in memory separately to the message (For use with the callback option 5, see below)

NOTE: The extension can be made up of the DTMF characters # and *. You can also use the , character to act as a one second pause.

- **Press ‘1’** to immediately Force Escalate to the next recipient in the escalation. If there was no escalation or this escalation does not allow forced escalation, nothing happens. Press 1 to *Confirm* or 2 to *Cancel*.

NOTE: This functionality can be enabled/disabled on an individual basis when creating or editing a recipient.

- **Press ‘2’ or ‘3’** to acknowledge the call is being handled. The message remains on the handset. Message status screen will be updated as *Read & Acknowledged* and the escalation stopped if applicable. Press 1 to *Confirm* or 2 to *Cancel*.
- **Press ‘4’** to delete the current message. Press 1 to *Confirm* or 2 to *Cancel*.
- **Press FCN + ‘4’** to delete all messages. Press 1 to *Confirm* or 2 to *Cancel*.
- **Press ‘5’** to dial the call-back number. Send command to Spectralink system to switch handset keypad from application to PBX. Send numbers to dial to the PBX. Press 1 to *Confirm* or 2 to *Cancel*.

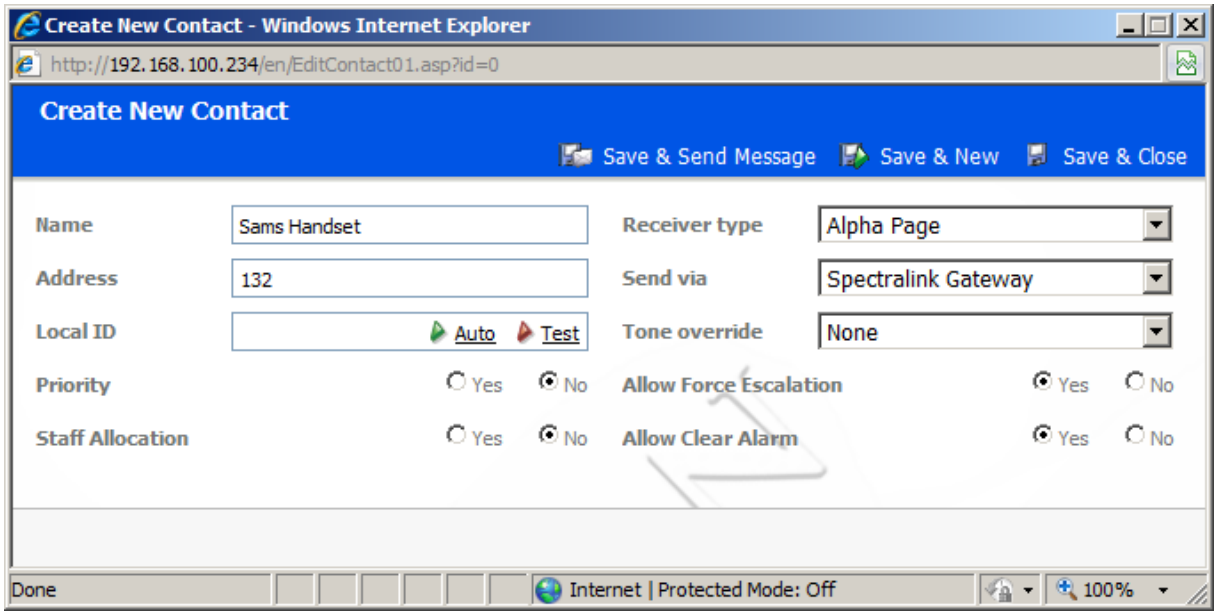
- **Press '6'** to Cancel the alarm that generated this message. If there was no alarm the session ignores this key input. Message is marked as Read if not already. Press 1 to *Confirm* or 2 to *Cancel*.

NOTE: This functionality can be enabled/disabled on an individual basis when creating or editing a recipient.

- **Press '7'** to view previous message.
- **Press '9'** to view next message

5.11.4 Sending a Message

1. Create a new contact. *Recipients -> Contacts -> Add New.*



2. Give the contact a useful *Name*.
3. In the *Address* field enter the handset tension number of the handset for the person you wish to contact.
4. Select the Spectralink gateway in the *Send Via* drop down box.
5. Finally click the Save & Send Message button. Type a test message and click *Send*. After a short time the message will appear on the handset.

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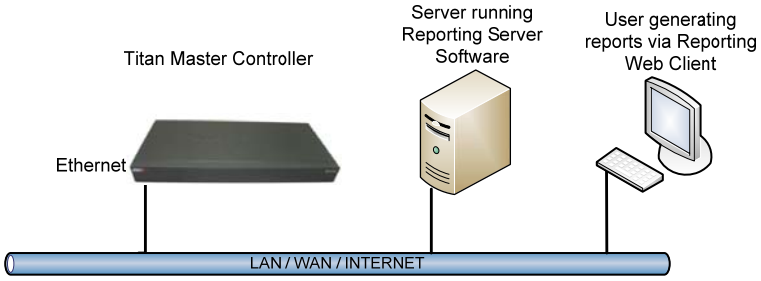
5.12 Reporting

The Master Controller can send information on its messages and alarms to an external reporting engine where detailed and customizable reports can be generated.

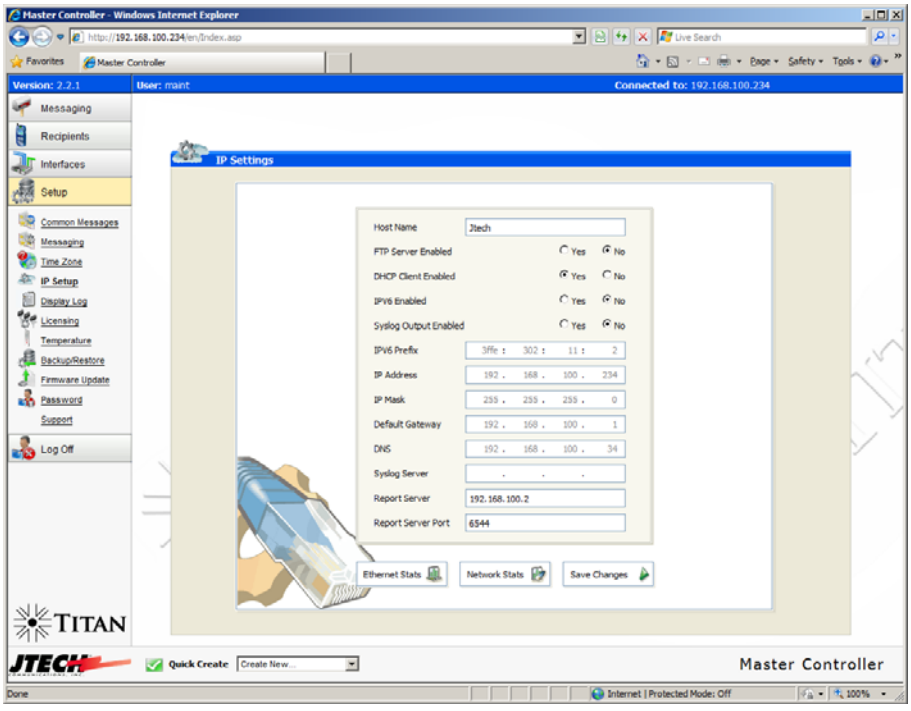
5.12.1 Setting up the System

1. The Master Controller unit will need to have a “Reporting” license key installed. Contact your place of purchase for this type of license key.
2. The Master Controller will need to be connected to the LAN or Internet and have access through any firewalls to the Reporting server.


Titan Master Controller
Server running Reporting Server Software
User generating reports via Reporting Web Client
Ethernet
LAN / WAN / INTERNET

5.12.2 Master Controller Settings

1. The only configuration that is required on the Master Controller is the Report Server IP Address and Port.
2. Enter the details in the fields on the *Settings -> IP Settings* screen.
3. Consult the Reporting Server Software User manual for details on configuration and report generation.



6 APPENDIX

6.1 Cable pin-outs

Serial RS232-D (RJ45) to RS232-D (RJ45) (Green cable as supplied by JTECH)

Typical applications would be to connect to an external serial messaging device, i.e. connecting the TITAN SmartPage-E to a Master Controller via serial using TAP.

RJ45 Pin	Name	Dir	Cable Configuration	Dir	Name	RJ45 Pin
1	DSR	←	1 ↔ 1	→	DSR	1
2	DCD	←	2 ↔ 2	→	DCD	2
3	DTR	→	3 ↔ 3	←	DTR	3
4	GND	—	4 ↔ 4	—	GND	4
5	RD	←	5 ↔ 5	→	RD	5
6	TD	→	6 ↔ 6	←	TD	6
7	CTS	←	7 ↔ 7	→	CTS	7
8	RTS	→	8 ↔ 8	←	RTS	8

Serial RS232-D (RJ45) to RS232 (DB9-female) DTE (Black cable as supplied by JTECH)

This cable would be used for connecting TITAN modules to RS232 DTE equipment such as a PC serial port.

RJ45 Pin	Name	Dir	Cable Configuration	Dir	Name	DB-9 Pin
1	DSR	←	1 ↔ 1 (nc)	→	DCD	1
2	DCD	←	2 (nc)	→	RXD	2
3	DTR	→	3 ↔ 3	←	TXD	3
4	GND	—	4 ↔ 4	←	DTR	4
5	RXD	←	5 ↔ 5	—	GND	5
6	TXD	→	6 ↔ 6	→	DSR	6
7	CTS	←	7 ↔ 7	←	RTS	7
8	RTS	→	8 ↔ 8	→	CTS	8

Serial RS232-D (RJ45) to RS232 (DB9-female) (Kirk z1500 connection)

Similar to the above cable but DSR is tied to DCD and connected through to DTR on the other end. Use exclusively for Master Controller/ADM to Kirk z1500 connections.

RJ45 Pin	Name	Dir	Cable Configuration	Dir	Name	DB-9 Pin
1	DSR	←	1 ↔ 1	→	DCD	1
2	DCD	←	2 ↔ 2	→	RXD	2
3	DTR	→	3 ↔ 3	←	TXD	3
4	GND	—	4 ↔ 4	←	DTR	4
5	RXD	←	5 ↔ 5	—	GND	5
6	TXD	→	6 ↔ 6	→	DSR	6
7	CTS	←	7 ↔ 7	←	RTS	7
8	RTS	→	8 ↔ 8	→	CTS	8

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Serial RS232-D (RJ45) to RS232 (RJ45) (Kirk z500 connection)

Use exclusively for Master Controller/Alarm Router to Kirk z500 connections.

RJ45 Pin Master Controller	Name	Dir	Cable Configuration	Dir	Name	RJ45 Pin Z500
1	DSR	←	1–1	→	DCD	1
2	DCD	←	2–2	→	DSR	2
3	DTR	→	3–3	→	RXD	3
4	GND	—	4–4	←	RTS	4
5	RXD	←	5–5	←	TXD	5
6	TXD	→	6–6	→	CTS	6
7	CTS	←	7–7	←	DTR	7
8	RTS	→	8–8	—	GND	8

Serial RS232-D (RJ45) to RS232 (DB9-female)

Used exclusively for Master Controller to Spectralink connections.

RJ45 Pin	Name	Dir	Cable Configuration	Dir	Name	DB-9 Pin
1	DSR	←	1–1	→	DCD	1
2	DCD	←	2–2	→	RXD	2
3	DTR	→	3–3	←	TXD	3
4	GND	—	4–4	←	DTR	4
5	RXD	←	5–5	—	GND	5
6	TXD	→	6–6	→	DSR	6
7	CTS	←	7–7	←	RTS	7
8	RTS	→	8–8	→	CTS	8

Serial RS232-D (RJ45) to RS232 (DB9-male) DCE

This cable will be used for connecting TITAN modules to RS232 DCE equipment such as an external modem with a DB9 connector.

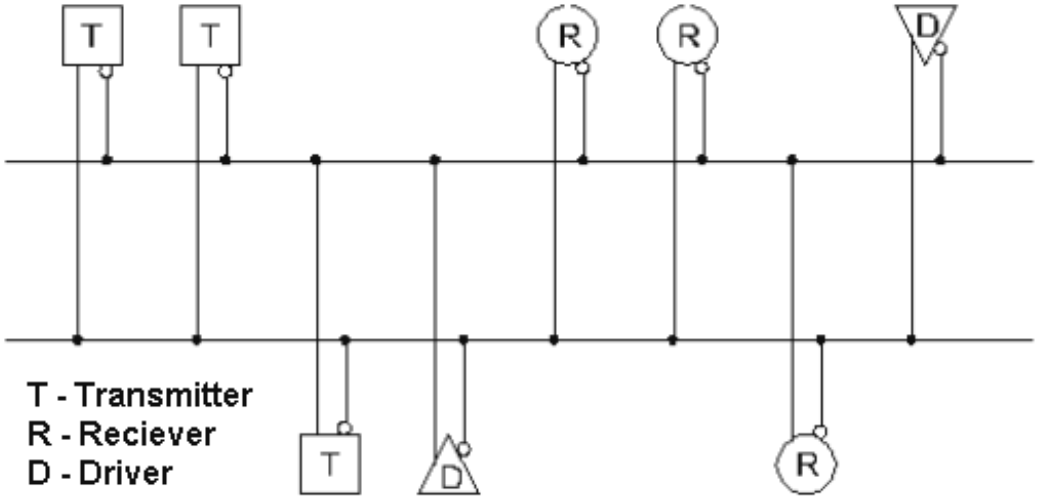
RJ45 Pin Master Controller	Name	Dir	Cable Configuration	Dir	Name	DB-9 male Pin
1	DSR	←	1–1	←	DCD	1
2	DCD	←	2–2	←	TXD	2
3	DTR	→	3–3	→	RXD	3
4	GND	—	4–4	→	DSR	4
5	RXD	←	5–5	—	GND	5
6	TXD	→	6–6	←	DTR	6
7	CTS	←	7–7	→	CTS	7
8	RTS	→	8–8	←	RTS	8

6.2 RS485 Communications

The RS485 communication standard defines a "balanced" (or differential) data communications interface using two signal wires from each direction. RS485 allows reliable serial data communication for:

- Distances of up to 1200m.
- Data rates of up to 10 Mbps.
- Up to 32 line drivers permitted on the same line.
- Up to 32 line receivers permitted on the same line.

Using line drivers can increase both the total distance and line drivers/receivers. The line voltage is at -1.5 to -6 Volts for Logic "1" and at +1.5 to +6 Volts for Logic "0". The line driver for the RS485 interface on half duplex produces a 5 Volt differential voltage on two wires.



The major advantage of RS485 is that the line driver can operate in three states (tri-state operation), Logic **1**, Logic **0** and **high-impedance**, where it draws virtually no current and appears not to be present on the line. The latter state is known as the *disabled* state and can be initiated by a signal on a control pin on the line driver integrated circuit. Therefore this allows Multi-drop operation, where up to 32 transmitters can be placed on the same line, although only one can be active at any one time. Each Multi-drop terminal must have its own unique node address to avoid a conflict with other devices on the system.

The half duplex (2-wire) data transmission line does not normally require any special termination. However, on long distance lines, the leading and trailing edges of the data pulses will be much sharper if terminating resistors, approximately equal the characteristic impedance of the line, are fitted at the extreme ends. These are typically between 50 to 150 ohms, which in turn reduce the effect of reflection at the ends of the line.

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6.3 ASCII Character Set

Ctrl	Dec	Hex	Char	Code
^@	0	00		NUL
^A	1	01	☺	SOH
^B	2	02	☻	SIX
^C	3	03	♥	EIX
^D	4	04	♦	EOI
^E	5	05	♣	ENQ
^F	6	06	♠	ACK
^G	7	07	•	BEL
^H	8	08	◘	BS
^I	9	09	○	HI
^J	10	0A	◙	LF
^K	11	0B	♂	VI
^L	12	0C	♀	FF
^M	13	0D	♪	CR
^N	14	0E	♫	SO
^O	15	0F	☼	SI
^P	16	10	►	SLE
^Q	17	11	◄	CS1
^R	18	12	↕	DC2
^S	19	13	‼	DC3
^I	20	14	¶	DC4
^U	21	15	§	NAK
^V	22	16	▬	SYN
^W	23	17	↨	EIB
^X	24	18	↑	CAN
^Y	25	19	↓	EM
^Z	26	1A	→	SIB
^[	27	1B	←	ESC
^\	28	1C	∟	FS
^]	29	1D	↔	GS
^^	30	1E	▲	RS
^_	31	1F	▼	US

Dec	Hex	Char
32	20	sp
33	21	!
34	22	"
35	23	#
36	24	$
37	25	%
38	26	&
39	27	'
40	28	(
41	29	)
42	2A	*
43	2B	+
44	2C	,
45	2D	-
46	2E	.
47	2F	/
48	30	0
49	31	1
50	32	2
51	33	3
52	34	4
53	35	5
54	36	6
55	37	7
56	38	8
57	39	9
58	3A	:
59	3B	;
60	3C	<
61	3D	=
62	3E	>
63	3F	?

Dec	Hex	Char
64	40	@
65	41	A
66	42	B
67	43	C
68	44	D
69	45	E
70	46	F
71	47	G
72	48	H
73	49	I
74	4A	J
75	4B	K
76	4C	L
77	4D	M
78	4E	N
79	4F	O
80	50	P
81	51	Q
82	52	R
83	53	S
84	54	T
85	55	U
86	56	V
87	57	W
88	58	X
89	59	Y
90	5A	Z
91	5B	[
92	5C	\
93	5D	]
94	5E	^
95	5F	_

Dec	Hex	Char
96	60	`
97	61	a
98	62	b
99	63	c
100	64	d
101	65	e
102	66	f
103	67	g
104	68	h
105	69	i
106	6A	j
107	6B	k
108	6C	l
109	6D	m
110	6E	n
111	6F	o
112	70	p
113	71	q
114	72	r
115	73	s
116	74	t
117	75	u
118	76	v
119	77	w
120	78	x
121	79	y
122	7A	z
123	7B	{
124	7C	|
125	7D	}
126	7E	~
127	7F	DEL

6.4 Further Help and Support

Contact your Place of Purchase

JTECH Communications, Inc., or a JTECH Authorized Distributor sets up most systems. Contact your place of purchase with inquiries beyond the scope of this manual.

This Product is Not Field Serviceable

Should a fault develop with the hardware or software, contact your place of purchase for the most appropriate form of action. Do not attempt to open or repair any of the products as this may void any warranty.

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6.5 Technical Specifications

Note: Specifications subject to change without any notice

Equipment type ..... Messaging control module with paging encoder
Power supply ..... 110-240VAC (autosensing) 50/60Hz 25W max
..... Via IEC mains socket
Languages supported ..... English, Spanish, Mandarin, Danish
..... German, French, Dutch, Mandarin Chinese
LED indicators .. Power, IP Link/Activity, TX PTT/Data, RS232/485 Tx, RS232/485 Rx, Modem
External connectors ..... Ethernet: RJ45f 10/100 Mbps
..... POCSAG: RJ45 with RS232 level POCSAG output
..... Serial RS232D: 3 x RJ45. 300-115200 bps
..... Serial RS232/485: RJ45
..... Modem: RJ12. 300-115200 bps
Internal transmitter ..... none (external transmitter must be placed away from this device)
Recipient capacity 10,000
Group capacity ..... up to 25 members per group
Concurrent clients ..... 9 clients max
Alarm capacity ..... 1000 max
Escalation capacity ..... 10 steps max, 65535 sec max between steps
Roster capacity ..... no capability
Reminder messages ..... no capability
Common messages ..... 100 max
Supported input protocols ..... TAP (PET / IXO), ADM/AIM, Scripting, SMTP (email), SMS
..... ESPA, Comp1, Comp2, Scope, Generic, SNPP, JTECH, Inovonics (FA & ES)
Supported output protocols .... TAP (PET/IXO), POCSAG, JTECH, SMS, SMTP (email), Logging
..... Spectralink DECT (supported handsets e340, h340, i640, 6020, 8002, 8020, 8030)
..... Kirk 500, Kirk 1500, Kirk 600v3, Kirk 6000 (supported handsets 3040, 4020, 4040, 5020)
..... Cisco Call Manager 4.x (supported handset 7921G)
..... Cisco Unified Communications Manager (CUCM) 5.x - 7.x (supported handset 7921G)
..... Comp1, Comp2, Scope, Alcatel 4400 DECT, SNPP, WCTP Scripting, ESPA
Alarm Programming ..... Normally open, normally closed, state change
..... Initial delay (65535 sec max)
..... Escalation delay (172799 sec max)
..... Repeats (100 max)
Ambient temperature operating range ..... 0 – 50 °C (20-90% RH non condensing)
Storage temperature range ..... -10 – 60 °C (10-95% RH non condensing)
Dimensions ..... Standard 1RU 19 inch rack case
..... 17.3 x 8.1 x 1.7 inches / 439 x 205 x 44 mm (without rack ears)
Weight ..... 5.9lb / 2.7kg nett